10432

DECEMBER 22, 1934

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2.
Telegrams: LANCET, RAND, LONDON. Telephone: TEMPLE BAR 7238 and 7239

No. XXV. OF VOL. II., 1934. LONDON, SATURDAY, DECEMBER 22, 1934. Pp. 104—Price 1s.
No. 5806. VOL. CCXXVII. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Annual Subscription: Inland £2 2s. Abroad £2 10s.

PURCHASE NOW For a Whole Year's Use.
91st Annual Issue. 2,407 Pages. 57,138 Names. 36s.
THE
MEDICAL DIRECTORY
1935
London, Provinces, Wales, Scotland, Ireland, Abroad, Navy, Army and Air Force.
This issue contains particulars of at least 30,000 changes. Changes of address are incorporated up to November, 1934.
London: J. & A. Churchill Ltd., 40 Gloucester-place, W.1.

NEW (FOURTH) EDITION. Completely rewritten. 10s. 6d. net.
TREATMENT OF DISEASES OF THE SKIN.
By KNOWSLEY SIBLEY, M.A., M.D., B.Ch. (Camb.).
London: Edward Arnold & Co., 41 and 43, Maddox-street, W.1.

DISEASES OF THE THYROID GLAND.
WITH SPECIAL REFERENCE TO THYROTOXICOSIS.
By CECIL A. JOLL, M.S., B.Sc., F.R.C.S. (Eng.).
Crown 4to. Fully Illustrated. £2 2s. net.
"No praise is too high for the author of this great book. It must be considered as the standard work on thyroid disease. Its pages summarise all that is known of this most interesting subject at the present day."—WEST LONDON MEDICAL JOURNAL.
William Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

¶ "*This book should certainly make and keep for itself a place in urological literature.*"—LANCET.

UROLOGY IN WOMEN:
A HANDBOOK OF URINARY DISEASES IN THE FEMALE SEX.
By E. CATHERINE LEWIS, M.S. (Lond.), F.R.C.S. (Eng.), Surgeon to the Royal Free Hospital, Surgeon and Urologist to the South London Hospital for Women.
Size 6½ × 9½. Pp. viii + 73. With 4 Coloured Plates and 23 other Illustrations. Price 6s.; postage 5d.; abroad 9d.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

THE CONDUCT OF MEDICAL PRACTICE
BY
THE EDITOR OF "THE LANCET"
AND EXPERT COLLABORATORS.
Price 10s. 6d. net. Postage 6d. extra.
"The book is certainly comprehensive, and indeed may be described as complete."—BRITISH MEDICAL JOURNAL.
London: THE LANCET LTD., 7, Adam-street, Adelphi, W.C.2

BY W. SAMPSON HANDLEY, M.S. LOND., F.R.C.S., Surgeon to the Middlesex Hospital.
CANCER OF THE BREAST AND ITS TREATMENT.
Second Revised Edition. With 82 Illustrations. 30s. net. (John Murray.)
THE GENESIS OF CANCER: A STUDY OF THE GENETIC RELATIONSHIP OF LYMPH-STASIS AND CANCER.
Just Published. 113 Illustrations. 21s. net.
(Kegan Paul, Anglo-French Library.)

H. K. LEWIS & CO. LTD.,
MEDICAL PUBLISHERS AND BOOKSELLERS.
MEDICAL LENDING LIBRARY
CHRISTMAS HOLIDAYS, 1934.
All Departments will be closed DECEMBER 25th and 26th.
Business as usual on Monday, December 24th.
London: 136 & 140 Gower-street, W.C.1

FRACTURES.
By MEURICE SINCLAIR, C.M.G., M.B., CH.B. (EDIN.).
With an Introduction by Sir ROBERT JONES, Bt., F.R.C.S.
Pp. 550. 337 X ray photographs, photographs and diagrams. 24s. net.
Constable & Co., Ltd., London.

MOTIVES AND MECHANISMS OF THE MIND
By E. GRAHAM HOWE, M.B., B.S.,
Hon. Phys., Tavistock-square Clinic for Functional Nervous Disorders.
Pp. 280. Demy 8vo. 10s. 6d. net.
FIRST VOLUME OF THE POST-GRADUATE SERIES.
THE LANCET LTD., 7, Adam-street, Adelphi, London, W.C.2.

HIGH BLOOD PRESSURE.
THIRD EDITION, JUST PUBLISHED. REVISED AND ENLARGED.
267 pages, with 48 illustrations. 15s.; postage 9d.
LOW BLOOD PRESSURE.
257 pages, with 14 illustrations. 15s.; postage 9d.
By J. F. HALLS DALLY, M.A., M.D. Cantab., M.R.C.P.
Wm. Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

OESOPHAGEAL OBSTRUCTION;
ITS PATHOLOGY, DIAGNOSIS AND TREATMENT
(including four chapters on Cancer of the Œsophagus).
By A. LAWRENCE ABEL, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon to the Cancer Hospital, &c.
Pp. 245. 132 Illustrations. 2 Col. Plates. 30s. net.
"Masterful and complete . . . Cannot be too highly praised."
—SURG. GYN. AND OBSTET. JOUR.
Oxford University Press, Amen House, London, E.C.4.

THE CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.
Vols. I and II. Price 10s. 6d. each. Postage extra.
Volume I.—"Each of the 45 Sections included in the book is contributed by an experienced worker. . . ."
Volume II.—"We may say that the success of the first volume is here repeated. . . ."—BRITISH MEDICAL JOURNAL.
"Physicians and surgeons cannot afford to omit the knowledge here outlined. . . ."—BIRMINGHAM MEDICAL REVIEW.
London: THE LANCET LTD., 7, Adam-street, Adelphi, W.C.2.

JOHN BALE, SONS & DANIELSSON, LTD.

BIRTH CONTROL TO-DAY. By Dr. MARIE STOPES. Post free, 5s. 3d.
"A most practical and helpful handbook. Every doctor should read it for himself."—MEDICAL WORLD.

CRIMINAL ABORTION. By L. A. PARRY, M.D., B.S., F.R.C.S. Post free, 11s. 3d.
"A very interesting and instructive volume . . . of great value to medical practitioners."—BRITISH MEDICAL JOURNAL.

GONOCOCCAL INFECTION: Recent Advances in Pathology, Diagnosis and Treatment. By R. V. STORER, M.R.C.S., L.R.C.P. With Foreword by KENNETH M. WALKER, M.A., F.R.C.S. Post free, 8s. "Frankly heretical."—BRITISH MEDICAL JOURNAL.

SCHISTOSOMIASIS (BILHARZIASIS)
By Dr. RAMESES GIRGIS. With Foreword by ERNEST CARROLL FAUST, Professor of Parasitology, Dept. of Tropical Medicine, Tulane University of Louisiana, New Orleans. Post free: inland 23s. 9d., abroad 26s. 6d.

COMMON GYNÆCOLOGICAL CONDITIONS AND THEIR TREATMENT.
By R. CHRISTIE BROWN, M.B., M.S., F.R.C.S. Post free, 2s. 8d.

ACROMEGALY. By F. R. B. ATKINSON, M.D., C.M. (Edin.). With a Foreword by Sir ARTHUR KEITH. 21s. net; post free 21s. 9d.
"This monograph is a work of reference which will supply information on any question relating to the disease, within the limits of present knowledge."—BRITISH MEDICAL JOURNAL.

ALLERGY IN RELATION TO LYMPHADENOMA. By G. P CHANDLER, M.D. (Camb.), M.R.C.P. Post free, 11s.
"A careful bit of work and well worthy of publication in monographic form."—JOURNAL OF PATHOLOGY.

ANTONY VAN LEEUWENHOEK AND HIS "LITTLE ANIMALS." By CLIFFORD DOBELL, F.R.S. Being some account of the father of Protozoology and Bacteriology, and his multifarious discoveries in these disciplines. Published on the 300th anniversary of his birth. Post free: inland 32s. 6d., abroad 34s.
"This is a very great book."—QUART. REVIEW OF BIOLOGY.

83-91, GREAT TITCHFIELD ST., LONDON, W.1

BRONCHOSPASM AND ASTHMA

A booklet surveying this subject, which includes diagrams and illustrations, has recently been published and has been sent to all members of the Medical Profession. You are invited to send for a copy should this have failed to reach you.

"THE LANCET" writes (28/4/34, p. 929):—

"We have received a pamphlet on 'Bronchospasm and Asthma,' written to bring before the medical profession the value of Felsol in the treatment of asthmatic subjects. The powders can be prescribed by the medical man in accordance with the definite régime which he decides to adopt in the treatment of a case, the claim for felsol being that its administration relieves promptly the attack of asthma by its influence over bronchial spasm, so that only the most severe cases would require the injection of morphia."

Telephone: Museum 2855

BRITISH FELSOL COMPANY LTD.
15, Caroline Street, London, W.C.1

Telegrams: Felsol, Westcent, London

VALENTINE'S MEAT-JUICE

The Power of Valentine's Meat-Juice to be Retained, to Aid Digestion, and to Sustain and Strengthen when Other Food Fails has been Demonstrated by Hospital Physicians and General Practitioners.

Pneumonia and Influenza

William H. Peters, M. D., *Admitting Physician Camp for Consumptives, State of Rhode Island, Providence, R. I.:* "VALENTINE'S MEAT-JUICE was the only nourishment retained by my five-year-old daughter during an attack of Pneumonia. She is still taking it and gaining strength. I consider that it saved her life and believe it to be the best product of its kind on the market."

Cavalier Dr. Enrico Ballerini, *Late Surgeon to the Hospital of Rome, Italy:* "I have used VALENTINE'S MEAT-JUICE in the treatment of patients and also personally after having been very ill with Influenza, and I must say it is an excellent tonic in conditions of great organic weakness. It is also very agreeable. I have prescribed it with the greatest satisfaction for convalescents and invalids restricted to a liquid diet."

For Sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY
Richmond, Virginia, U. S. A.

A-12

DECEMBER 22, 1934

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 5808 LONDON, SATURDAY, DECEMBER 22, 1934 CCXXVII

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

Dosage Above the Pharmacopœial Maximum. By ARTHUR F. HURST, F.R.C.P.—(*Illustrated*) 1379
Pulmonary Asbestosis. By W. BURTON WOOD, M.R.C.P., and S. ROODHOUSE GLOYNE, M.D. 1383
Surgical Aspects of the Spastic Colon and the Prediverticular State. By A. L. D'ABREU, F.R.C.S.—(*Illustrated*) 1385
On the Synergism between Œstrin and Pituitrin. By E. MØLLER-CHRISTENSEN 1388
Hæmaturia in Appendicitis. By WYLIE MCKISSOCK, F.R.C.S. 1389
The Recent Wave of Streptococcal Infection. By H. L. WALLACE, F.R.C.P., and A. BROWNLIE SMITH, F.R.C.S. 1391

CLINICAL AND LABORATORY NOTES

Schick Tests in Nigerian Natives. By J. CAUCHI, M.D., and E. C. SMITH, M.D. 1393
Chorea Treated by Injection of Distilled Water. By G. ARBOUR STEPHENS, M.D. 1394
Antimony Dermatitis Treated with Sodium Thiosulphate. By A. FAKHRY, M.B. 1394

MEDICAL SOCIETIES

North of England Obstetrical and Gynæcological Society 1395
Royal Academy of Medicine in Ireland 1395

NEW INVENTIONS

Correction Appliance for Fingers and Wrist. By FRANK HOWITT, M.D.—(*Illustrated*) 1394

REVIEWS AND NOTICES OF BOOKS

Taylor's Principles and Practice of Medical Jurisprudence. By Prof. Sydney Smith, M.D., and W. G. Cook, LL.D. 1396
Acute Otitis and Mastoiditis in General Practice. By N. Asherson, F.R.C.S. 1397
Applied Eugenics. By P. Popenoe and R. H. Johnson 1397
Constructive Eugenics and Rational Marriage. By M. Siegel, M.D. 1397
Practical Methods in Biochemistry. By Prof. F. C. Koch 1398
A Surgeon's China. By A. Gervais 1398
Schistosomiasis (*Bilharziasis*). By Dr. R. Girges 1398
Endometriosis. By H. F. Harbitz 1398

LEADING ARTICLES

STATUS OF THE OSTEOPATH 1399
THE EPILEPTIC PERSONALITY 1400
THE PLACE OF IRON IN HOOKWORM ANÆMIA .. 1400

ANNOTATIONS

Theobald Smith—(*With portrait*) 1402
London Voluntary Hospitals 1402
B.M.A. Memorandum on the Osteopaths Bill 1401
Muscular Contraction ... 1403
Urticaria 1403
The Luminous Woman of Pirano 1403
Charing Cross Hospital Medical School 1404
Another Analgesic for Childbirth 1404
Broadcasting and the G.M.C. 1405
Disruption of the Abdominal Incision 1405

THE SERVICES

Royal Naval Medical Service.—Royal Army Medical Corps 1407

PROGNOSIS

XXXII.—Prognosis of Femoral Hernia. By GEOFFREY KEYNES, F.R.C.S. 1406

SPECIAL ARTICLES

Convalescent Measles Serum in School Epidemics. By F. G. HOBSON, F.R.C.P.—(*Illustrated*) 1408
Medicine and the Law: Evidence of Blood Tests in Paternity Dispute .. 1407
Scotland: Edinburgh Chair of Clinical Medicine 1418

CORRESPONDENCE

London University and its Medical Schools (Dr. C. T. Norris, Mr. S. C. Ranner, Prof. R. M. F. Picken) 1412
The Rebuilding of St. George's Hospital (Sir George Turner) .. 1414
Uterine Contraction (Dr. S. R. M. Reynolds) 1415
Intestinal Paralysis following Diphtheria (Dr. A. E. Gammie) 1416
Tetanus: a Request for Cases (Dr. Ranyard West) 1416
Serum Prophylaxis and Puerperal Sepsis (Dr. R. J. V. Pulvertaft) .. 1416
New Agglutination Rack (Dr. B. R. Sandiford) .. 1417
Insulin Hypoglycæmia (Dr. O. Leyton) 1418

PUBLIC HEALTH

The L.C.C. Central Medical Staff.—Maternal Mortality 1419
Infectious Disease in England and Wales ... 1419

OBITUARY

Charles John Jacomb-Hood, M.R.C.S. 1423
William Morrison Milne, F.R.C.S. 1423

PARLIAMENT

Notes on Current Topics: Registration and Regulation of Osteopaths Bill.—Indian Constitutional Reforms and Health Services.—Dartmoor Convict's Suicide and Flogging. Health Conditions in Merchant Ships 1420
House of Commons: Health Conditions in Sunderland and Seaham.—Housing (Scotland) Bill 1422

MEDICAL NEWS

Royal College of Surgeons 1423
University of London ... 1423
Universities of Bristol, Birmingham, Sheffield, Manchester, Edinburgh 1424
Hospital for Sick Children, Great Ormond-street .. 1392
The Infants Hospital 1419
Medico-Legal Society ... 1424
Dental Science Prize 1425
Epsom College 1425
Royal Lancaster Infirmary 1425
Willesden Maternity Hospital 1425
M.O.H.'s of Irish Counties 1425

NOTES, COMMENTS, AND ABSTRACTS

Adam Rous, Surgeon to Edward the Third. By R. R. JAMES 1426
Thomas Young 1428
Merrie England 1429
World-wide Hygienic Precaution 1429
Whitaker's Almanack ... 1430
New Preparations: "Septer" Outfit.—Anaquintine. — Key Brand Grape Juice ... 1430
Canadian Medical Directory 1430
A One-handed Knife 1430

Appointments 1425
Births, Marriages, Deaths 1425
Vacancies 1430

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY LIMITED

(FOUNDED 1892)

President: Sir JOHN ROSE BRADFORD, Bart., K.C.M.G., C.B., C.B.E., M.D., F.R.C.P., F.R.S.

Trustees for the Reserve Fund:

Rt. Hon. LORD DAWSON, P.C., G.C.V.O., K.C.B., M.D., F.R.C.P. Sir JOHN ROSE BRADFORD, Bart., K.C.M.G., C.B., C.B.E., M.D., F.R.C.P., F.R.S. Sir SQUIRE SPRIGGE, M.D., F.R.C.P., F.R.C.S.

The Society was founded for the following purposes: To protect, support, and safeguard the character and interests of legally qualified Medical and Dental Practitioners; to advise and assist Members of the Society in matters affecting their professional character and interests; and to indemnify them in respect to actions, etc., undertaken on their behalf.

The Society is insured with Lloyd's Underwriters to an unlimited extent in respect of all adverse costs and damages awarded against Members in any action which the Society undertakes on their behalf.

Annual Subscription: £1. Entrance Fee: 10s. Assets exceed £60,000.

No entrance fee to those joining within 12 months of registration.

Full particulars and forms of application for membership from the Secretary, Victory House, Leicester Square, W.C.2.

Telephone: GERRARD 4814.

SELECTED WRITINGS *of*

JOHN HUGHLINGS JACKSON

M.D., F.R.C.P., F.R.S.

VOL. I.—EPILEPSY AND EPILEPTIFORM CONVULSIONS.
VOL. II.—EVOLUTION AND DISSOLUTION OF THE NERVOUS SYSTEM: SPEECH: VARIOUS PAPERS: ADDRESSES AND LECTURES.

Edited by JAMES TAYLOR, M.D., F.R.C.P.

With the advice and assistance of GORDON HOLMES, M.D., F.R.C.P., and F. M. R. WALSHE, M.D., F.R.C.P.

Over 500 pages in each vol. Price each 25/- net, postage extra (Inland 9d., Abroad 10d.).

"It is a rich mine of clinical observations, and should be read not only by those who are interested in neurological principles, but also by all who have to deal with epileptic patients."—*British Medical Journal.*

RADIOTHERAPY in the DISEASES OF WOMEN

By MALCOLM DONALDSON,
B.A. (Cantab.), F.R.C.S. (Eng.), M.B., Ch.B. (Cantab.),
Physician Accoucheur with Charge of Out-patients, St. Bartholomew's Hospital, Consulting Gynæcologist, Royal Northern Hospital, &c.

Demy 8vo. 148 pages. 11 illustrations in the Text; 2 Plates, one in Colour.
Price 7/6 net; postage 6d.

This book is written with the intention of giving to general practitioners an impartial view of the value of radiotherapy at the present stage of its evolution.

ANATOMY IN THE LIVING MODEL

By DAVID WATERSTON, M.A., M.D., F.R.C.S.E., F.R.S.E.,
Bute Professor of Anatomy at the University of St. Andrews

276 pages. 74 illustrations. 16 coloured plates. Price 25/- net, postage 9d.

"The author has brought to his task the fruits of a wide and long experience as well as of careful and considered thought, and has succeeded in producing a volume of much originality and suggestiveness."—*British Medical Journal.*

DIAGNOSIS OF MENTAL DEFICIENCY

By HENRY HERD, M.A., M.B., Ch.B.,
School Medical Officer, Manchester Education Committee;
Certifying Medical Officer to the Lancashire Mental Deficiency Authority.

284 pages. Demy 8vo. Fully illustrated with 39 Half-tone and 12 Line Blocks.
Price 12/6 net, postage 6d.

"A concise and practical guide to the recognition of mental deficiency on modern lines."—*Public Health.*

HODDER & STOUGHTON, LTD., *Medical Publications,*
St. Paul's House, Warwick Square - - - - LONDON, E.C.4.

ADDRESSES AND ORIGINAL ARTICLES

DOSAGE ABOVE THE PHARMACOPŒIAL MAXIMUM*

BY ARTHUR F. HURST, M.D. Oxon., F.R.C.P. Lond.
SENIOR PHYSICIAN TO GUY'S HOSPITAL

I CAN best introduce the subject of my lecture by quoting the following paragraph from the introduction to the 1932 edition of the British Pharmacopœia, which very clearly summarises the principles which guided the editors in stating the dosage of the drugs it contains.

"It must be clearly understood that the 'doses' mentioned in the Pharmacopœia are not authoritatively enjoined, as binding upon prescribers. They are intended merely for general guidance and represent the average range of quantities which are generally regarded as suitable for adults when administered by mouth. The maximal doses mentioned may, as a rule, be repeated three or four times in 24 hours, but it must not be assumed that they indicate the greatest amounts of drugs that may be given by repeated administration. The medical practitioner will exercise his own judgment and act on his own responsibility in respect of the amount of any therapeutic agent he may prescribe or administer. When, however, an unusually large dose appears to have been prescribed, it shall be the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted."

As I am frequently asked by dispensers whether a prescription of mine containing a dose of a drug greater than the maximum given in the Pharmacopœia is correct, it seemed to me that I could not do better than choose the subject of dosage above the pharmacopœial maximum for an address to members of the Pharmaceutical Society.

The dosage given in the B.P. represents the average dose given to adult patients. Experience shows that under certain conditions very much larger doses of certain drugs can be given with advantage. In some instances, as in the case of atropine, this is due to the great variations in individual susceptibility, the same therapeutic effect being obtained in a very susceptible individual with a dose which may be only a half or a quarter of the dose required for a patient who is unusually resistant to the action of the drug. In other cases recent therapeutical investigations have led to the discovery that a more powerful and sometimes quite different effect can be obtained with a dose much greater than that given in the B.P.; the larger dose has then generally to be administered with special precautions. In such cases it would only be safe to alter the official dosage if it were possible at the same time to add a note as to the method of administration.

Iron in Anæmia

In spite of the large amount of work which has been done in recent years on the treatment of anæmia and the admirable accounts published by Dr. L. J. Witts on the indications and dosage of iron, it is surprising to find how little care is often taken in deciding whether a case is one which will benefit with iron or with liver, proprietary preparations combining the two together being very popular. The dosage of iron is generally quite insufficient, complicated organic preparations are too often ordered instead of the simple inorganic preparations, which are also the most effective, and iron injections have not yet passed into the oblivion they deserve.

Anæmia as a cause of symptoms is far more common than is generally recognised, and many middle-aged women with chronic ill-health, which is often ascribed to the menopause, are really suffering from an easily curable anæmia. The vast majority of cases, including those which follow hæmorrhage, respond with great rapidity to efficient treatment with iron. When I first came to Guy's in 1901 the popular Mist. ferri arsenicalis contained five grains of iron and ammonium citrate with five minims of Liquor arsenicalis. When I was Dr. Beddard's clerk in the out-patient department he told me to double the dose of iron and halve that of arsenic. Later I increased the iron to fifteen grains and then to twenty grains, and Dr. Witts has shown us that we should increase it still further to thirty grains. It is unsafe to give much larger doses, as one patient of mine almost died from acute iron encephalopathy following the administration of forty grains four times a day for three weeks. We now know that arsenic is useless, and that iron given by injection is quite inert; the popular and expensive Fraisse's ferruginnus serum may have some effect on the mind, but it has none on the blood. When thirty grains of iron and ammonium citrate are given three times a day, the hæmoglobin generally increases by about one per cent. a day, and still more rapidly if the anæmia is severe; for example, a youth of twenty with splenic anæmia who came in with 14 per cent. hæmoglobin was prepared for operation by giving him this dose of iron; his hæmoglobin percentage rose to 76 in 45 days.

Though there is a popular notion that iron causes indigestion and leads to constipation there are very few people who cannot take thirty grains of iron and ammonium citrate in half an ounce of water three times a day after meals as long as is necessary without unpleasant results. The anæmia, which is always present after hæmorrhage from an ulcer and which delays healing if left untreated, rapidly responds to this treatment, and so far from irritating the gastric mucous membrane the iron appears to have a directly favourable action on the ulcer and the associated gastritis. In a recent case the hæmoglobin percentage, which, two months after a hæmorrhage, was only 48 rose to 87 in 25 days.

The anæmia in carcinoma of the stomach and colon often improves very quickly, and no case should undergo operation with less than 80 per cent. hæmoglobin. Only if the hæmoglobin is very low is it necessary to hasten matters by one or more preliminary transfusions.

Liver and stomach are quite useless in all anæmias except Addison's (pernicious) anæmia and some closely allied megalocytic anæmias, such as that of sprue, and it should be reserved for such cases.

Hydrogen Peroxide and Hydrochloric Acid in Achlorhydria

Achlorhydria is a common sequel of chronic gastritis and is present in about 15 per cent. of all patients suffering from abdominal symptoms as well as in about 4 per cent. of perfectly healthy young adults. In about 75 per cent. of cases the power of secreting acid can be restored by dieting, removal of septic foci from the mouth and throat, and lavage of the stomach when fasting in the

* An address delivered before the Pharmaceutical Society of Great Britain on Dec. 11th, 1934.

morning with dilute hydrogen peroxide (half an ounce to the pint). The hydrogen peroxide acts as a mild antiseptic and dislodges the mucus adhering to the mucous membrane. The treatment is repeated daily until the washings are clear. In many cases a fortnight is enough to restore the secretory activity of the stomach, but in some cases the patient has to continue with the treatment himself for several weeks.

Since I began using hydrogen peroxide lavage for gastritis eight years ago only about a quarter of the patients to whom I should formerly have given hydrochloric acid now require this drug. It should never be used except as a temporary measure until a second test-meal after a course of lavage has shown that achlorhydria is still present, as it is infinitely more satisfactory for a patient to provide his own acid than to have to take it from a bottle. When the gastritis is so severe that all the acid-secreting cells are destroyed, and when the achlorhydria is due to an inborn error of secretion, as it may be in the rare cases of constitutional and familial achylia gastrica, hydrochloric acid should be given.

When one drachm of dilute hydrochloric acid is mixed with five ounces of water it is only slightly weaker than natural gastric juice. Thus diluted, with the addition of the juice and pulp of an orange and sugar, it makes quite a pleasant beverage, which should be taken before breakfast and with lunch and dinner for the rest of the patient's life. The usual dose of dilute hydrochloric acid is quite inadequate. This was first clearly shown by some experiments made in cases of Addison's anæmia, a condition which is almost invariably associated with incurable achlorhydria, by Dr. Maurice Shaw when my house physician in 1922. He found that one drachm of dilute hydrochloric acid sipped during the hour following a test-meal

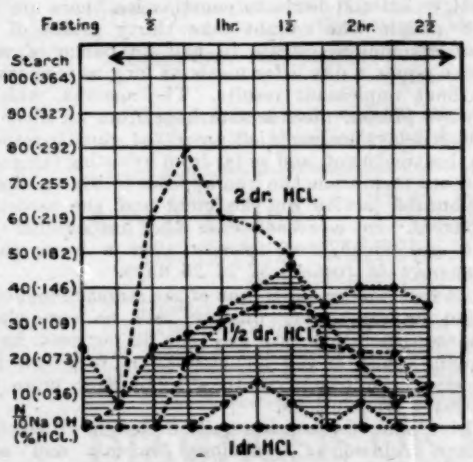


FIG. 1.—Curves showing amount of free HCl present in a case of Addison's (pernicious) anæmia with achlorhydria when 1 drachm, 1½ drachms, and 2 drachms respectively of dilute hydrochloric acid, suitably diluted, were sipped at intervals during the hour following consumption of a test-meal. The shaded area represents the limit of free HCl in 80 per cent. of normal people.

was rarely sufficient to neutralise the alkaline contents of the stomach, so that no free acid appeared. Occasionally one and a half drachms produced a normal curve and two drachms a hyperchlorhydric curve (Fig. 1), but more frequently two drachms were required to produce a normal curve of acidity (Fig. 2). In rare instances even two drachms did not lead to the appearance of free acid.

Hexamine as a Biliary Antiseptic

It has been known for many years that hexamine is excreted by the bile, but Dr. F. A. Knott was the first to prove definitely that it acts as a biliary antiseptic in spite of the bile being alkaline, although in the urinary tract it is inactive unless formalin is set

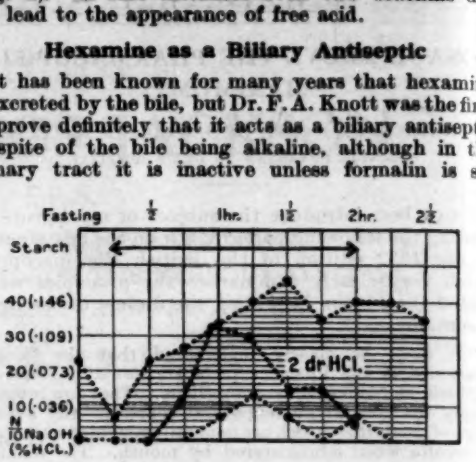


FIG. 2.—Curve showing amount of free HCl present in a case of Addison's anæmia, with achlorhydria when 2 drachms dilute hydrochloric were taken in the manner described under Fig. 1.

free by the acid urine. Pure bile obtained through a duodenal tube has no antiseptic action, but if large doses of hexamine are given, the bile, which can be shown to contain unaltered hexamine, is strongly antiseptic, and any bacteria which are present in it before the treatment begins disappear. Formerly the maximum dose of hexamine which could be given with safety was limited by the supposed necessity of keeping the urine acid. But hexamine is just as efficient a biliary antiseptic when sufficient alkali is given to make the urine permanently alkaline; under such conditions no formalin is set free, and enormous doses can be administered without causing any bladder irritation. A mixture containing sixty grains each of sodium bicarbonate and sodium citrate in two ounces of water is given after breakfast, after tea, and last thing at night after drinking a glass of milk or water. The reaction of the urine is tested every time it is passed; as soon as it is found that the urine is constantly alkaline, if necessary after the dose of the alkalis has been increased, a hundred grains of hexamine is added to the mixture, so that three hundred grains are taken a day. The treatment can be continued for periods of six weeks. The hexamine sterilises the bile-ducts and gall-bladder, and, when combined with non-surgical biliary drainage by means of Epsom salts, it results in the cure of most cases of cholecystitis. This treatment should be given for a week or two before and after operations on the gall-bladder and bile-ducts in order to guard against septic complications. In cases of severe infective cholangitis with jaundice, high temperature and rigors, it has sometimes appeared to save the life of the patient.

Hexamine is excreted into the cerebro-spinal fluid and has been found by experiment to prevent the development of poliomyelitis in monkeys inoculated with emulsion of the spinal cord from fatal cases. I think, therefore, that large doses are worth giving in the manner I have just described to contacts in poliomyelitis epidemics, and possibly also during the acute stages of encephalitis and for the cerebral complications of ear and sinus disease.

I should like to suggest that in the next edition of the B.P. explanatory notes should occasionally be given under the head of dosage. Thus in the 1932

edition the dose of hexamine is given as ten to thirty grains. But five to fifteen grains is the correct dose when it is used as a urinary antiseptic, and fifty to a hundred grains as a biliary antiseptic. For the former acid sodium phosphate or similar drug must be given to keep the urine acid, and for the latter alkalis must be given to keep it alkaline. The higher pharmacopœial doses—fifteen to thirty grains—are too small for biliary antisepsis and too large for urinary antisepsis, as if given alone and especially if given with acid sodium phosphate they would be very liable to cause severe hæmorrhagic cystitis.

Atropine in the Treatment of Ulcer

There is no doubt that the presence of free acid in the stomach is an essential factor in the development of gastric, duodenal, and anastomotic ulcers, and that such ulcers tend especially to develop in individuals with the hypersthenic gastric constitution in which more than the average quantity of acid is secreted. Successful treatment largely depends upon choosing a diet which calls forth as little secretion as possible and has a high neutralising power. Alkalis are given to neutralise still more of the free acid, and olive oil and atropine to inhibit its secretion. It is a familiar fact that some people are much more susceptible to the action of atropine than others. Its influence on salivary secretion is approximately parallel to its influence on gastric secretion. In order, therefore, to obtain a maximal effect on the stomach the dose should be increased until the largest quantity is given which does not make the mouth unpleasantly dry. I give 1/200th grain of atropine sulphate dissolved in a drachm of water before three of the feeds and a double dose last thing before going to sleep, as it is particularly important to inhibit the continuous secretion of acid during the night, when there is no food in the stomach which can partially neutralise it. Both doses are then increased by ten minims of the mixture—i.e., 1/1200th grain—every day until the patient complains of unpleasant dryness of the mouth or paralysis of accommodation. After reducing the doses by ten minims they are continued throughout the period of treatment. As the atropine dries the mouth it may be assumed to dry the stomach, and actual tests have shown how effective it is in reducing the quantity of free acid present (Fig. 3 (A) and (B)). It is impossible to guess beforehand what will be the adequate dose in any given individual. Occasionally a patient cannot take more than the initial 1/200th grain three times a day and 1/100th grain at night; the majority can take about 1/100th grain, whilst occasionally as much as 1/40th grain is found to be the correct dose for the day and 1/40th plus 1/200th for the night. It is important to increase the dose in this way, as I believe that 1/200th grain would be without any effect on the last patient though sufficient for the first; in other words, 1/200th grain in one individual is equivalent to 1/40th grain in another.

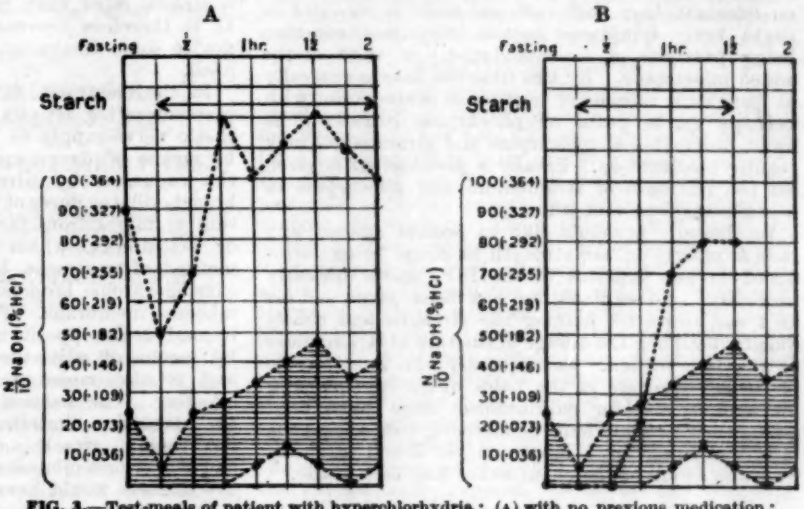


FIG. 3.—Test-meals of patient with hyperchlorhydria: (A) with no previous medication; (B) one hour after 1/40th grain of atropine sulphate by mouth.

Hyoscine, Stramonium, and Pilocarpine in Parkinsonism

About twenty-five years ago I found that the dose of hyoscine which could be safely given to patients with paralysis agitans could be greatly increased by combining it with pilocarpine, which prevented dryness of the mouth and paralysis of accommodation without in any way diminishing the calming effect on the tremor; this had been discovered about 1895 by Erb. It was consequently possible in most cases to give 1/50th grain hyoscine hydrobromide, in many cases 1/20th grain, and occasionally as much as 1/8th grain three or four times a day, without any troublesome dryness of the mouth, paralysis of accommodation or other unpleasant symptom being produced. I had many patients who were thus enabled to take large doses continuously for several years. Though the tremor was not often completely controlled, it was almost invariably rendered much less trying, the effect being considerably greater than with the maximal doses of hyoscine given by itself in the usual way.

In view of the close resemblance of some of the post-encephalitic disorders to paralysis agitans it was natural that hyoscine should be tried for the former. Quite unexpectedly it was found to have comparatively little effect on the tremor, which is generally a much less prominent symptom than in paralysis agitans, but to exert a favourable influence on the rigidity; whereas the rigidity of paralysis agitans may remain completely unaffected by the drug, even when given in large doses with pilocarpine in the manner I have described. Observations carried out by A. J. Hall with belladonna and by E. A. Carmichael and F. H. K. Green with stramonium showed that these drugs are even more effective than hyoscine.

It occurred to me in 1928 that a combination of pilocarpine with hyoscine or stramonium might make it possible to give a larger dose of the latter drugs and thereby obtain a more favourable effect in post-encephalitic parkinsonism as well as in paralysis agitans. The result has been most satisfactory. In every case improvement has occurred, and in some the whole life of the patient has been made infinitely more happy as a result of overcoming a good deal of the muscular rigidity. One patient

who had been completely bedridden for over a year was able to get about again within a fortnight, and some who were completely unable to dress, wash, or feed themselves and were dependent upon others for everything, can now carry out all the essential activities of life without help.

I begin by giving the patient fifteen minims of tincture of stramonium in half an ounce of water on waking, after lunch, and after tea. If the stiffness causes disturbed nights by preventing the patient from turning over in bed, an extra dose is given before going to sleep. One drachm is added to each of the three doses of the mixture on alternate days, so that in eight days the total dose is doubled. The gradual increase in the dose is continued until the patient begins to complain of unpleasant dryness of the mouth or paralysis of accommodation. Pilocarpine nitrate 1/10th grain is then added to the latest dose of stramonium, and the mixture is prescribed in half an ounce of water. One drachm is again added to each of the three doses of the mixture on alternate days until sufficient relief is obtained or slight toxic symptoms appear—the most common being paralysis of accommodation—in spite of the added pilocarpine. By this time the dose is generally at least sixty minims of tincture of stramonium with perhaps 2/5ths grain of pilocarpine nitrate. The exact proportion of pilocarpine and stramonium may require modification. Finally a prescription is given for the full dose of stramonium and pilocarpine in a single half-ounce of water.

Incidentally I should like to protest against any radical change in the strength of drugs being introduced in new editions of the B.P. unless urgently necessary. No explanation has been given so far as I am aware for halving the strength and consequently doubling the dosage of tincture of stramonium in the last edition. Consequently the innumerable physicians who are in the habit of giving this drug for asthma and for parkinsonism must have been giving their patients half the intended dose during the last two years, for I have not yet found anybody who was aware of the change that had been made.

Morphia for Incurable Pain

In spite of all the modern advances in therapeutics we must still often rely upon morphia for the alleviation of pain. Inoperable cancer is not necessarily very painful, but when it involves the spine and in many cases of carcinoma of the liver and of the pelvic organs the pain is excessively severe. By the fearless use of morphia it is always possible to keep a patient with this terrible disease comparatively happy and completely free from pain. There is obviously no need to fear the development of a drug habit in a dying patient, but most doctors are curiously averse to giving the huge doses which may be required in such cases. I do not think that the various substitutes for morphia have any special advantage. The dose should be found by experiment which, when given at sufficiently frequent intervals, keeps the patient completely free from pain. As the tissues quickly develop the power of destroying increasing quantities of morphia so that only a small proportion is left to exert its analgesic effect, the dose has to be steadily increased in order to remain adequate. The dose required during the last week of life in a patient who survives for an unusually long period may be huge—as much as fifty grains a day, but it should be remembered that this is really equivalent to about one grain a day at the onset of treatment, most of the morphia being destroyed in the liver and other organs. Many patients with secondary cancer of the liver and spine live for many weeks, and even many months, and I am inclined to think that the morphia often delays death—its one disadvantage, though this is more a disadvantage to the unhappy relatives than to the sleeping patient. For a proper dose is one which keeps the patient in a continuous state of twilight sleep; the sleep is often dreamless, but when dreams occur they are generally happy ones. The patient is easily roused three or four times a day to take a little nourishment, but he only wakes sufficiently to smile and murmur a few words.

Adrenaline in Asthma

The pharmacopœial dose of adrenaline is both too large and too small. It is too large for habitual use in ordinary cases of asthma and too small for use in the exceptional cases of status asthmaticus. In spite of recent advances in our knowledge of asthma it is comparatively rare that a patient is given such complete relief that he never has another attack. It is therefore necessary in almost every case to devise some treatment for the asthmatic paroxysm itself.

In the treatment of the asthmatic paroxysm the preponderating activity of the vagal over the sympathetic nerve-supply to the bronchi can be overcome by means of drugs, such as atropine, which paralyse the vagus, or by adrenaline, which stimulates the bronchodilator fibres of the sympathetic. The inhalation of fumes from powders containing stramonium or belladonna, which was formerly the universal method of treatment, had the grave disadvantage of causing chronic bronchitis by irritating the bronchial mucous membrane. This treatment should never be used, as the opposite method of restoring the balance by means of adrenaline has no such disadvantage and is also more promptly and more constantly effective. The patient should be taught to inject the adrenaline himself, as if he does this at the first sign that an attack is developing it will be aborted, and one or two minims will often be sufficient, though five or more would have been required had he had to wait for a doctor or nurse to give the injection at the height of the attack. This small dose gives rise to none of the unpleasant symptoms often caused by larger doses, which sometimes make a patient prefer the asthma to the adrenaline, and as it does not even raise the blood pressure there is no danger of damaging the arteries. Its use has in many cases the further justification of making good a deficiency in the secretion of adrenaline, just as thyroid preparations do in myxœdema. The treatment also reproduces the way in which relief may on rare occasions occur under natural conditions. If an individual during a severe attack of asthma comes under the influence of sudden fear or anger, the two emotions which W. B. Cannon showed stimulate the secretion of adrenaline, the attack immediately ceases, the patient having had an "autogenous dose" of adrenaline. We may hope that the time will come when asthma will be curable, but until that consummation has been attained, the proper use of adrenaline deprives asthma of most of its terrors, and makes it possible for every asthmatic to live a life of moderate activity. The patient should be provided with a pocket case containing a small bottle of adrenaline, a special small all-glass hypodermic syringe with very fine bore so that minims and half minims can be accurately measured up to a maximum of seven minims, an "iodine pencil" and a spare needle.

The rare condition of status asthmaticus, in which

severe asthma continues uninterruptedly for days or weeks and may end in fatal exhaustion, can always be arrested by the method of continuous adrenaline injection which I first used about ten years ago. The needle is kept in position with a full syringe, and after an initial injection of a dose which is known to cause no unpleasant symptoms, one or more minims are injected every 15, 30, or 60 seconds, according to the patient's reaction, the rate being varied until it is found how frequently the injection can be made without tachycardia or other symptom arising. The injections are continued, if necessary, for even half an hour or more; relief always follows and generally manifests itself by the patient falling into a deep sleep, which may be the first he has had for several days.

Anaphylaxis can also be most efficiently treated by this method of injecting adrenaline, which is far more effective than occasional injections of larger doses. If adrenaline is always at hand when a patient is given serum or other treatment which may cause anaphylactic reaction, the latter should never prove fatal.

PULMONARY ASBESTOSIS

A REVIEW OF ONE HUNDRED CASES

By W. Burton Wood, M.D. Camb., M.R.C.P. Lond., D.P.H.

CONSULTING PHYSICIAN FOR TUBERCULOSIS TO THE ESSEX COUNTY COUNCIL; PHYSICIAN TO OUT-PATIENTS, CITY OF LONDON HOSPITAL, VICTORIA PARK; AND

S. Roodhouse Gloyne, M.D. Leeds, D.P.H.

PATHOLOGIST TO THE HOSPITAL

During the last few years we have from time to time reported the result of our observations of the effects of the inhalation of asbestos dust as seen in patients attending a chest hospital or revealed at autopsy. Our studies commenced in the year 1928, and a preliminary paper dealing principally with radiographic appearances was published by one of us in the following year. In 1930 we reported our findings in a series of 37 asbestos workers who had been examined at Victoria Park. As we now have had the opportunity of studying 100 cases, the time seems opportune for a brief survey of the whole group.

ANALYSIS OF CASES

Our cases may be divided into four chief groups.

I.—PULMONARY ASBESTOSIS

Fifty-three cases (19 males, 34 females); 12 deaths (4 males, 8 females), including 2 with carcinoma of the lung and 1 with a few deposits of growth in the pleura. In the cases still alive and under observation diagnosis rests upon (*a*) typical appearances of the radiogram, (*b*) symptoms and physical signs of fibrosis, and (*c*) presence of asbestosis bodies in the sputum. These three diagnostic points are arranged in order of merit. Twenty-four cases (9 males, 15 females) were positive on all three counts; 7 (all females) had positive radiograms and clinical symptoms and signs, but no sputum was available—or if available no asbestosis bodies were found; 9 (5 males, 4 females) gave positive clinical signs and asbestosis bodies were present in the sputum, but radiograms were either not available or failed to show definite evidence of disease; 1 (male) had a positive radiogram and asbestosis bodies in the sputum but no clinical signs or symptoms.

II.—PULMONARY ASBESTOSIS WITH ACTIVE TUBERCULOSIS

Twenty-one cases (4 males, 17 females); of these 11 (3 males, 8 females) were fatal. One had a tuberculous empyema, one a pyopneumothorax and lardaceous disease, the others pulmonary tuberculosis. Ten cases (1 male, 9 females) are still alive. All have tubercle bacilli and asbestosis bodies in the sputum.

III.—PULMONARY ASBESTOSIS WITH OBSOLESCENT TUBERCULOSIS

Nine cases (4 males, 5 females). This group emphasises the fact that obsolescent tuberculosis is not necessarily reactivated by asbestosis. Three cases have been fatal (1 male, 2 females); of those still under observation 2 (females) have radiograms exhibiting typical asbestosis and healed apical tuberculosis, with asbestosis bodies in the sputum; and 4 cases (3 males, 1 female) have asbestosis bodies present in the sputum and radiograms showing obsolescent tuberculosis but indeterminate or negative as to asbestosis.

IV.—DOUBTFUL CASES

Seventeen cases (6 males, 11 females) under observation. All but one have suggestive symptoms and signs but the radiograms are indeterminate, and with two exceptions the sputum, where available, contains no asbestosis bodies. Of these exceptions one has indefinite symptoms, signs of emphysema, and a negative radiogram, but asbestosis bodies are present; the other has no physical signs or symptoms and a negative radiogram, but has asbestosis bodies in the sputum.

THE CLINICAL PICTURE

The picture of pulmonary asbestosis is that of a pneumonoconiosis occurring in a factory in which few precautions had been taken to protect the workers from a danger, the gravity of which was not realised. Happily these conditions are now a thing of the past and elaborate precautions have been taken to protect the workers. There is thus good reason to believe that the disease is now under control, though it seems probable that workers exposed to the dust under the old conditions will continue to present themselves for examination for some time to come. There is no need to amplify the descriptions of pulmonary asbestosis already given elsewhere. The symptoms are indeed those common to all forms of pulmonary fibrosis uncomplicated by bronchial dilatation or pulmonary excavation—stubborn cough with little expectoration, discomfort or dull pain in the chest, occasionally perhaps a streak of blood in the phlegm, and dyspnœa. It is this last symptom of which the patient complains. The distress occasioned by constant breathlessness is so great that the disease might almost be described as monosymptomatic. It is the patient's first and last complaint. In the earlier stages dyspnœa is only apparent during exertion—"I found I could not hurry to work in the morning!"—in the later stages the act of undressing or even the effort required for speech may cause the patient to pant for breath. When asbestosis is complicated by tuberculosis, bronchopneumonia, or other thoracic disease, the symptoms of these will be added, but the dyspnœa of pneumonoconiosis can still as a rule be recognised. Malnutrition is very evident in the terminal months when the patient may pass into a condition of extreme cachexia.

DIAGNOSIS

When a new disease is under consideration the salient features are first observed, and diagnosis depends on the recognition of gross symptoms. Thus phthisis was formerly only diagnosed when symptoms and signs of advanced disease were evident. We now diagnose incipient phthisis with confidence at a stage when the patient is healthy in appearance, well nourished, and little troubled by symptoms. In the diagnosis of asbestosis we have still to depend upon the symptoms and signs of more or less gross disease. We have no means adequate to discover during life the existence of the finer degrees of

pulmonary fibrosis which must precede graver developments, and it is not surprising that the pathologist sometimes discovers post-mortem evidence of fibrosis not recognised during life.

In diagnosis at the present time we have to rely on a history of exposure to asbestos dust as our starting point. The symptoms described by the patient may supply a clue, for the malingerer does not as a rule emphasise dyspnœa as his chief disability. In the physical examination the patient's appearance should receive special attention. In advanced cases the "earthy" character of the complexion and a slight violet tinge in cheeks or lips are noteworthy. The physical signs supply suggestive but never conclusive evidence. They are those of a basal fibrosis, and the fine nature of the pulmonary scarring is indicated by fine dry crackles not dissimilar to those often heard over the bases of emphysematous lungs. More superficial crackles produced by the movements of a damaged pleura are often mingled with the fibrotic râles.

The radiographic picture is that of a fibrosis of fine type affecting the lower two-thirds of the lung fields; the scarring is as it were etched in. Attention may be drawn to a difficulty constantly encountered when a delineation of the basal portions of the lungs is required. The diaphragmatic shadow censors the bases of the lungs, and in a radiogram taken with the ordinary antero-posterior technique as much as two inches of the lung may be blotted out. The extent of this "silent" area can be demonstrated in the normal lung by a lipiodol injection, the result of which will surprise those accustomed to regard the supra-diaphragmatic area as the lung base. Again, a lateral view of the lung, if the interlobar septum is thickened or if the middle lobe is opaque as the result of, for example, an epituberculous exudate, shows that the lower margin of the middle—i.e., of the lower portion of the right upper—lobe corresponds approximately with the shadow of the cupola of the diaphragm. At a recent meeting of the Röntgen Society Dr. L. A. Rowden pointed out that a more extended view of the lung bases can be obtained by the simple expedient of placing the patient in the dorsal position and centring the tube over the brow. We have tried this method and verified its efficacy.

The exact diagnostic significance of asbestosis bodies in the sputum is doubtful. As pointed out by one of us (S. R. G.) the formation of an asbestosis body is evidence of tissue change. We cannot assume, however, that the expectoration of a few asbestosis bodies implies that pulmonary fibrosis has already occurred. If we could make this assumption the problems of diagnosis and claims for compensation would be simple. Nevertheless the microscope will sometimes reveal commencing fibrosis in lung sections where ante-mortem radiograms failed to reveal evidence of disease. The clinical methods at present available do not enable us to determine incipient disease. The asbestosis body is simply evidence of exposure to asbestos dust and of tissue reaction thereto. This tissue reaction may be accompanied by fibrosis, but it does not necessarily follow that this is sufficiently extensive to produce symptoms or clinical signs or abnormal shadows in a radiogram—or we might add to justify compensation.

PROGNOSIS

As the disease has only been recently recognised as a clinical entity our present ideas on prognosis may require modification. In a previous article we stated that the cessation of exposure to asbestos dust did not avail to check the spread of disease. This is certainly often true, but we have now seen patients whose condition appears to have remained stationary since stopping work in the factory. That even serious damage to the lungs is not incompatible with many years of tolerably comfortable existence is proved by such an example as that of a patient who was still able to carry out administrative duties at a factory when nearly 40 years' exposure to the dust had caused a fibrosis involving all except the apical regions of the lungs. We recently examined a female patient, at the request of Dr. C. McShane, who after a period of two and a half years' employment as a spinner had retired to get married. Twenty years later symptoms, signs, and X ray pictures supplied convincing proof of pulmonary asbestosis of a moderate degree of severity, and asbestosis bodies were readily demonstrated in the sputum. But despite some disability the patient, whose period of service did not entitle her to compensation, described herself as fairly comfortable, and she was still able to perform her household duties. It is none the less obvious that any patient who betrays symptoms of fibrosis or in whom any evidence of fibrosis is discovered, whether by physical or radiological examination, should at once cease working in any dusty occupation. A quiet life, preferably in the country, and avoidance of the risk not only of dust inhalation but of catarrhal infection, provides the best safeguards against an aggravation of incipient disease.

Septic bronchitis, broncho-pneumonia, and pulmonary tuberculosis are the commonest terminal complications of the disease.

COMMENTS

Occupation.—An elaborate analysis of occupational factors is not possible in this short article. All the 67 women in our series had been exposed to asbestos dust in the same factory. They were employed in the following departments: spinning, 24; weaving, 5; mattress making, 9; carding and opening, 11; and miscellaneous or unstated, 18. Twenty-two of them began their employment before the age of 18, which is now no longer permitted under Home Office regulations. The shortest exposure was six months (two cases) and the longest 15 years.

The 33 men came under several categories. About two-thirds of them were employed in the same factory as the women and had performed a variety of jobs. The others included an elderly man who was himself the owner of a small factory, a van boy, aged 18, whose spare time during two and a half years' employment had been spent in mixing powdered asbestos in an open yard, a middle-aged boiler riveter who had served his apprenticeship as a youth in a shop where asbestos was used for lagging pipes, and a man who had been employed handling asbestos mattresses in the open air at an aerodrome. Among the men the shortest exposure was 11 months (disintegrating department), and the longest about 40 years (clerical and administrative work). Four of the group began their employment under the age of 18.

Pathology.—In addition to the autopsies mentioned above, 10 post-mortem examinations have been made by one of us (S. R. G.) of cases we had not seen during life (3 males, 7 females), but these are not included in our 100 cases. Macroscopically the fibrosis is best seen in the lower lobes, and adherent pleura is very common, but silicotic nodules have not been encountered. Histologically the disease begins in the respiratory bronchioles and alveolar ducts, and is characterised by a cellular reaction of

mononuclear phagocytes and asbestosis giant cells followed by the formation of a reticular fibrosis.[1]

Tuberculosis and Asbestosis.—In a previous article [2] dealing with tuberculosis and asbestosis we recorded 10 cases of active tuberculosis in 57 cases of pulmonary asbestosis (17·5 per cent.). The figures have now reached 21 cases of active tuberculosis out of 100 (21 per cent.). It must be borne in mind, however, that these figures do not indicate the percentage of cases of asbestosis with tuberculosis in the industry. We have been dealing with a group, mostly from one factory, who were sufficiently ill to seek advice at hospital. In discussing this question at length, Merewether [3] considers, after a review of the whole industry, that the data are too fragmentary to be dogmatic at the moment, but that whatever "the added risk of tuberculosis may be in asbestosis, it is less than that associated with silicosis." We hope to publish our material on this subject at a later date.

Complications.—Apart from pneumonia and pulmonary sepsis and complications arising from tuberculosis, there have been none definitely attributable to the asbestosis with the exception of two instances of spontaneous pneumothorax diagnosed by X ray, and apparently unassociated with tuberculosis, which may have been due to the rupture of emphysematous bullæ.

We are indebted to our colleagues at Victoria Park for permission to quote certain cases seen by them.

For a full account of pulmonary asbestosis in all its bearings the reader is referred to Dr. Merewether's exhaustive paper.[3]

REFERENCES

1. Gloyne, S. Roodhouse: Tubercle, 1933, xiv., 445, 493, and 550.
2. Wood, W. B., and Gloyne, S. R.: THE LANCET, 1931, ii., 954.
3. Merewether, E. R. A.: Tubercle, 1933–34, xv., 69, 109, and 152.

SURGICAL ASPECTS OF THE SPASTIC COLON AND THE PREDIVERTICULAR STATE*

BY A. L. D'ABREU, M.B. Birm., F.R.C.S. Eng.

ASSISTANT IN THE SURGICAL UNIT, THE WELSH NATIONAL SCHOOL OF MEDICINE, THE ROYAL INFIRMARY, CARDIFF; LATE SURGICAL REGISTRAR, THE GENERAL HOSPITAL, BIRMINGHAM

MANY patients suffering from colon dysfunction, apart from proved examples of carcinoma, diverticulitis, and ulcerative colitis, are admitted to surgical as well as medical wards for investigation. Of this group the majority are discharged with intact abdomens and uneasy minds; others undergo fruitless laparotomy under general anæsthesia; a minority, however, operated upon under spinal anæsthesia, display a fascinating and important living pathology.

Neoplastic, ulcerative, and fully developed diverticulous diseases of the colon have no place in this paper, which concerns a group of cases suffering from abdominal pain, mainly left-sided, but with important references to other areas and sometimes associated with blood and mucus in the stools; irritative diarrhœa and constipation occur in equal proportions. Dyspepsia is often an important and misleading symptom. Concentrating mainly on those prediverticular conditions, until recently mainly of radiological interest, an attempt will be made to establish spasm as an important ætiological factor in the formation of diverticula in the colon. The disquieting thought that surgery, apart from dealing with complications such as obstruction, perforation, abscess-formation, and fistulous communications, only offers a dangerous operation for the cure of colon diverticulitis, makes investigation of the earlier prediverticular state of tremendous importance. Advances in the knowledge of the ætiology may enable effective medical treatment to be employed. If spasm be an important factor, the administration of belladonna in suspect prediverticular states will be of great value as a prophylactic measure.

SPASTIC COLON

Spastic colon is a well-recognised entity. Dr. Stacey Wilson first drew attention to it in his book "Tonic Hardening of the Colon" [1]; a tender, hard, contracted colon may be palpated in patients whom I have grouped into three classes.

(*a*) The commonest sufferer is described by Dr. Hardy [2] as being "the emotionally unstable type of individual whose colon is unstable also." Often the patient is a nervous female, thin and unhappy, perennially dyspeptic, ailing and constipated, through whose thin abdomen the racing aorta and a hard tender colon can be palpated with ease. Radiological and biochemical examination discover an active tonic stomach with pylorospasm and hyperchlorhydria. I have no evidence, nor do I think, that these patients proceed to diverticular formation. They are frequently met with in the surgical out-patient room; it is no place for them and they repay surgery with groans and a constantly increasing list of symptoms. More than one has undergone pyloroplasty, many appendicectomy, without the least relief of their dyspepsia.

It is important to remember this class of patient when investigating cases of pylorospasm. Cannon and Murphy [3] have produced pylorospasm by traumatising intestines and have declared its occurrence in these circumstances to be due to a viscero-visceral reflex. Clinically, suitable general treatment combined with the administration of medicine containing belladonna, the tincture of hyoscyamus, the perchloride of iron and of mercury, often leads to great improvement.

(*b*) Occasionally spastic colon occurs in the young athletic man who suffers from constipation; pain may be a prominent feature and may lead to operation for supposed acute abdominal conditions. No abnormality is seen other than generalised enterospasm.

(*c*) Far different is the last group represented by the rather fat middle-aged man, muscular and athletic in his younger days, sane and sanguine in outlook, but worried by an alteration in his bowel habit and because his ample meals, formerly enjoyed with relish, cause indigestion and discomfort; frequently defæcation is unsatisfactory and irregular. Small internal hæmorrhoids often develop and the descending colon is tender and hard. Rectal examination is more painful than usual, but once the sphincter has been passed the rectum itself is normal. We will consider later that the important pathological change in these cases lies in the muscle layer and not in the mucous membrane; mucus and blood are therefore not always present. The test-meal (in all the cases so far investigated) shows hyperchlorhydria. Outline in the radiological picture of the barium enema, as in the clinical picture, is indecisive

* Based on a short paper read before the Association of Surgeons of Great Britain and Ireland at Birmingham on May 3rd, 1934.

(Fig. 1). There is no evidence of defective filling to confirm the presence of a suspected neoplasm; nor is there any clear picture of diverticulitis. In some cases areas suggestive of the prediverticular state (to be described later) are seen: these appearances are not those of a normal sigmoid and descending colon and the haustrations are badly delineated. Sigmoidoscopy adds to the list of negative or doubtful findings, but may eliminate carcinoma as in the case illustrated in Fig. 2 in which the symptoms and the constriction in the barium enema suggested malignancy: direct inspection of the mucous membrane enabled me to exclude carcinoma.

FIG. 1.—Barium enema. Note irregular outline of sigmoid colon (see text).

Laparotomy may then be done: if under general anæsthesia this will rarely disclose any abnormality; if, however, spinal anæsthesia is employed, the descending and sigmoid colon will show reddened contracted areas that from time to time pass into spasm. By observing such cases surgery has provided valuable pathological evidence that spasm and muscular hypertrophy are important factors in the sequence of events that lead through the prediverticular state to the fully developed stage of diverticular formation. Prof. Seymour Barling [4] was the first surgeon to note a case explored under spinal anæsthesia in which a reddened colon suddenly contracted to the size of an index-finger, became intensely rigid, and between the tæniæ of which, pearl-like buds extruded themselves in a regular series. As the spasm relaxed the small bud-like diverticula receded. The X ray appearances showed the early changes associated with the prediverticular state. The patient was a male, aged 43, who complained of the passage of blood and mucus in his stools.

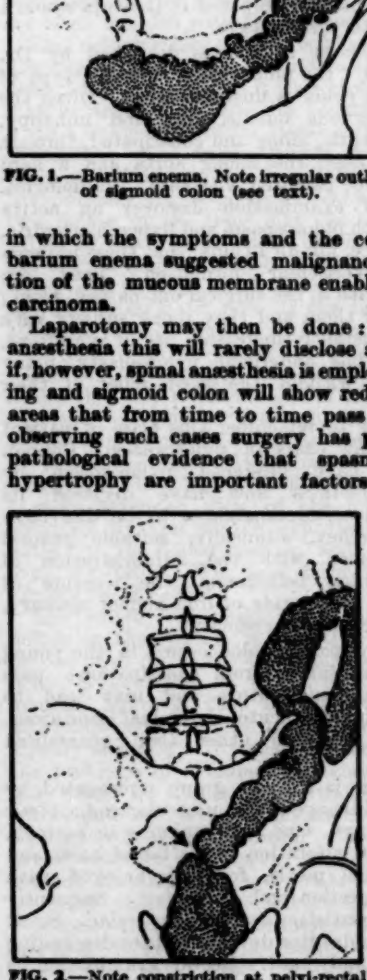


FIG. 2.—Note constriction at pelvi-rectal junction.

THE PREDIVERTICULAR STATE

The Leeds school solved the mystery of the time-honoured diagnosis of "sigmoiditis," and Lord Moynihan, Maxwell, Telling, and Gruner described clearly the pathology and clinical picture of diverticulitis of the colon. Spriggs and Marxer [5] in an exhaustive radiological dissection of the subject demonstrated the three stages of this important condition: (1) The prediverticular stage; (2) the appearance of uninflamed diverticula (diverticulosis); and (3) the final stage of "diverticulitis" in which superadded inflammation grossly changes the clinical, pathological, and radiological pictures.

The radiographic appearance of the prediverticular state (Fig. 3) is well summarised by Spriggs and Marxer as "a ragged outline of the wall of the bowel which does not dilate even in the most favourable position" and they point out that normal segmentation is lost. Discounting its symptomatology they suggest that clinically the condition is rarely suspected and that symptoms are due to the associated diverticula which usually coexist. Such a view holds out little hope of early treatment and is, I feel, not justified.

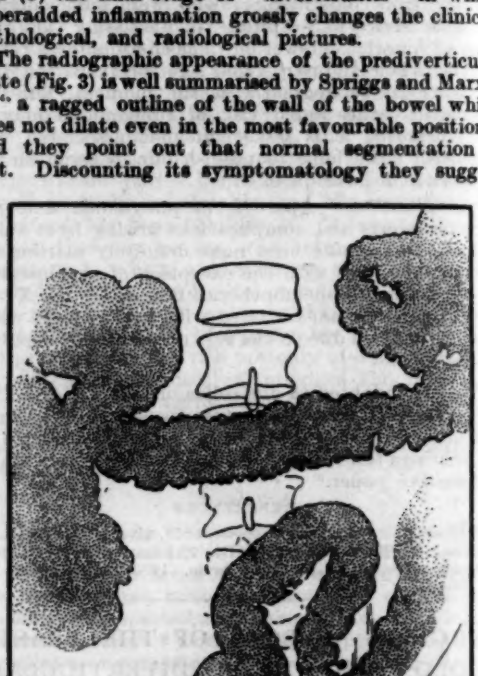


FIG. 3.—Note well-marked prediverticular state in the transverse colon. A diverticulum can be seen in the sigmoid loop.

I have studied four cases shown radiographically to be in the prediverticular state unaccompanied by diverticulosis and in which laparotomy was carried out because of pain and the passage of blood and mucus. The case of Mr. Barling's referred to above is of this type. In one of the four cases mentioned, laparotomy was done by a surgeon under general anæsthesia and no abnormality was discovered. A barium enema taken some months later showed the appearance of prediverticulosis.

PATHOLOGY AND ÆTIOLOGY OF THE PREDIVERTICULAR STATE

The living pathology has been indicated briefly and can only be studied under spinal anæsthesia; this is explained as follows. Peristalsis in the large bowel depends on the automaticity of the muscular fibres, the myenteric plexuses of Meissner and

Auerbach, and nervous impulses from the vagus and the sacral parasympathetic; relaxation, except in the case of the sphincters, depends on sympathetic nervous influences. General narcosis paralyses the parasympathetic system, while spinal anæsthesia, on the other hand, prevents the action of those sympathetic fibres which flow out to the abdominal viscera and either leaves the parasympathetic unaffected and in undisputed domination (Eppinger and Hess [6]) or more probably allows the intrinsic dynamics of the bowel free unimpeded action. Learmonth [7] has produced excellent evidence that there is a high degree of autonomy in the plain muscle of the bowel and its intrinsic nerves.

In portions of bowel in the prediverticular state removed along with areas of established diverticulation, the most notable change seen is hypertrophy of the circular muscle coat which projects as bands into the lumen of the bowel (seen in the accompanying drawings (Fig. 4) taken from Mr. Edwards's Hunterian lecture [8] on diverticula of the colon and appendix). The increased power of the circular muscle contraction, aided perhaps by the concertina-like action of the tæniæ coli as first suggested by Sir Arthur Keith, tends to force out the mucous membrane between the areas of hypertrophied muscle and following the line of the blood-vessels to form diverticula.

What causes this muscle to hypertrophy? Here appears to be the keynote of the ætiology: it is developing at a time of life when muscular tissue elsewhere is tending to be replaced by fat. The suggestion that the cause lies in sympathetic over-activity is illogical; such a state induces dilatation not spastic contraction. One rather expects to find excessive parasympathetic activity and to seek for a picture of vagotonia. Eppinger and Hess have pointed out the coexistence of pylorospasm and colospasm in vagotonics. Kleinschmidt [9] has reported a case of megalocolon in which autopsy showed a deficiency of the second and third sacral nerves and which he considered had deprived the colon of its parasympathetic nerve-supply. Adamson and Ian Aird [10] succeeded in producing experimental megalocolon in the cat by removing the parasympathetic nerve-supply and leaving the sympathetic in unopposed supremacy.

FIG. 4 A.—The prediverticular state. A longitudinal section of the sigmoid colon. The line points to a vessel at the base of the depression. This, and the sections following, have been magnified between three and four times. (H. C. Edwards.) Note hypertrophy of circular muscle.

There is some evidence to support this theory of parasympathetic overaction. I have found hyperchlorhydria to be present in spastic prediverticular subjects; moreover belladonna (a parasympathetic antagonist) relieves this condition. In cases where presacral and lumbar colonic neurectomy has been done, subsequent barium enemata may present radiological appearances reminiscent of those seen in the prediverticular state. Fig. 5 is a barium enema picture made from a patient on whom I had performed presacral and lumbar colonic neurectomy. The spastic irregularity in the sigmoid colon was seen in further radiograms.

FIG. 4 B.—The prediverticular state. A more advanced stage.

In a series of cases kindly investigated for me by Mr. Stammers [11] after lumbar sympathectomy had been performed by him for vasospastic conditions in the legs there is however no alteration in the normal barium enema picture of the bowel. It is therefore not easy to prove that this hypertrophy of the circular muscle is due to overactivity of the parasympathetic system. It is, however, a clinical fact of great interest that tobacco smoking frequently aggravates the symptoms of these prediverticular and spastic colon subjects. Nicotine diminishes activity both in the sympathetic and parasympathetic systems, but as the normal balance favours the vagus and the sacral autonomic outflow, increased activity of the motor function leads to excessive peristalsis and spasticity. It is well to note also that pylorospasm is often present in heavy smokers.

In discussing theories of diverticular formation it is easy to be destructive. Many authors have considered the cause to be one of senile degeneration. H. C. Edwards [8] has demonstrated that the age-incidence of diverticulosis is much earlier than formerly believed and that cases occur in middle as well as in old age (Fig. 6). In my series several of the undoubted prediverticular cases were under the age of 45, the youngest was 31, and the condition was confirmed at laparotomy under spinal anæsthesia.

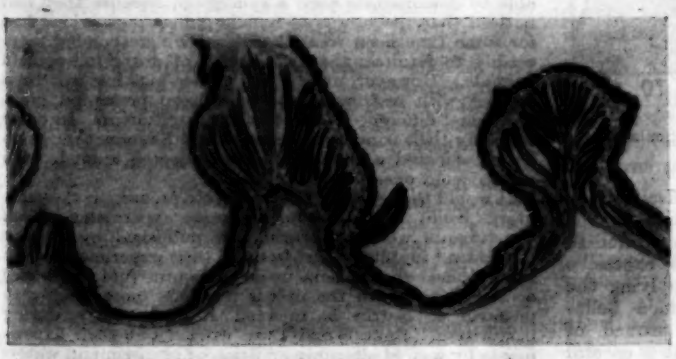


FIG. 4 C.—The prediverticular state. ? Early diverticulosis.

The pathogenesis as observed in the change from the prediverticular state to that of diverticulosis leaves little room for a developmental theory of causation.

In the usual appeal to infection Marxer and Spriggs favour oral sepsis and postulate the frequent coexistence of osteo-arthritis of the spine as proof of septic absorption; clinicians however now consider osteo-arthritis as degenerative rather than infective in origin. The sepsis theory is easy to attack; the incidence is vastly greater in the male than female sex; surely sepsis is not correspondingly greater in one than the other? Nor do these prediverticular patients show evidence of toxicity clinically or pathologically; there is no leucocytosis until the advanced stages of diverticulitis.

FIG. 5.—Case in which presacral and lumbar colonic neurectomy had been performed.

Constipation as a cause is rebutted by the greater male-incidence since this disorder is clearly commoner in the female. To obviate this objection Lockhart-Mummery considers flatus, which is more excessive in the male, to be the cause. Ian Fraser [12] of Belfast, has pointed out to me that the sigmoid colon is consistently free from gas and provides radiographic evidence that air distension is greatest in the ascending colon and in the upper rectum. An examination of prediverticulous areas shows absence of gas.

In conclusion, it has been my object in considering a group of cases of colon dysfunction to establish

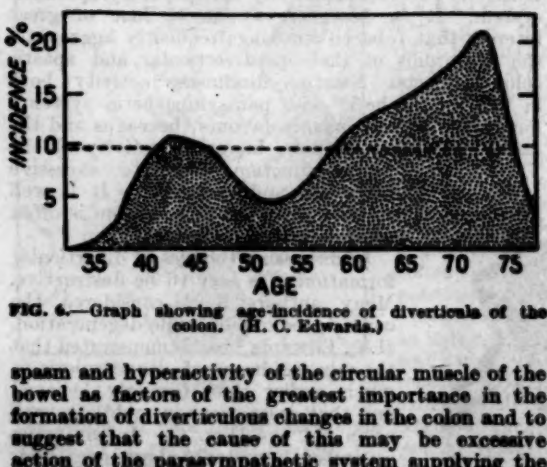


FIG. 6.—Graph showing age-incidence of diverticula of the colon. (H. C. Edwards.)

spasm and hyperactivity of the circular muscle of the bowel as factors of the greatest importance in the formation of diverticulous changes in the colon and to suggest that the cause of this may be excessive action of the parasympathetic system supplying the abdominal viscera. In the group examined belladonna combined with hyoscyamus has proved of clinical value in treatment. I believe that a careful study of this type of case by clinical, radiological, and test-meal examinations will enable a diagnosis of spastic colon and prediverticulosis to be made in patients who too frequently are vaguely diagnosed as suffering from "colitis" and are sometimes operated upon to exclude malignant disease. If such exploratory laparotomy be performed spinal anæsthesia will be of enormous value in allowing the operator to discover the true pathology and so avoid the disappointment of the fruitless exploration that is only too likely if general anæsthesia be employed.

I am grateful to Prof. Seymour Barling who first interested me in this subject, for his practical help and advice and for permission to study his cases; to Prof. A. W. Sheen for his encouragement and the provision of facilities for studying the subject; to Mr. Ian Fraser and Mr. F. A. R. Stammers for most helpful communications; and to Mr. H. C. Edwards who kindly allowed me to use Figs. 4 and 6.

REFERENCES

1. Wilson, T. S.: Tonic Hardening of the Colon, London, 1927.
2. Hardy, T. L.: Personal communication.
3. Cannon, W. B., and Murphy, F. T.: Ann. of Surg., 1906, xliii., 512.
4. Barling, S.: Brit. Med. Jour., 1929, i., 322.
5. Spriggs, E. I., and Marxer, O.: Quart. Jour. Med., 1925–26, xix., 16.
6. Eppinger, E., and Hess, L.: Vagotonia. Translated by Kraus and Jelliffe, New York, 1917, p. 12.
7. Learmonth, J. R., and Markowitz, J.: Amer. Jour. Physiol., 1930, xciv., 501.
8. Edwards, H. C.: THE LANCET, 1934, i., 221.
9. Kleinschmidt (quoted by Rendle Short): Medical Annual, Bristol, 1928, p. 94.
10. Adamson, W. A. D., and Aird, I.: Brit. Jour. Surg., 1932, xx., 220.
11. Stammers, F. A. R.: Personal communication.
12. Fraser, I.: Personal communication.

ON THE SYNERGISM BETWEEN ŒSTRIN AND PITUITRIN

BY E. MØLLER-CHRISTENSEN

ASSISTANT GYNÆCOLOGIST TO THE FREDERIKSBERG HOSPITAL, AND ASSISTANT IN THE UNIVERSITY INSTITUTE FOR GENERAL PATHOLOGY, COPENHAGEN

(*From the National Institute for Medical Research, London*)

IT is still uncertain how parturition is induced at the termination of pregnancy. Various experiments and clinical observations, however, tend to show that the process requires a synergism between œstrin and the hormone of the posterior lobe of the pituitary body (pituitrin or, possibly, oxytocin).

Brouha and Simonnet [1] in 1926 thought that they were able to demonstrate such a synergism, because they had noticed that the uterus of female guinea-pigs, which had for some time been treated with œstrin, responded more readily to pituitrin than the uterus of untreated control animals. However, even if the guinea-pigs had not been treated with œstrin, they would have presented great individual differences of sensibility to pituitrin. In order to verify their conclusion, Brouha and Simonnet ought to have compared a great number of injected animals with non-injected ones.

It would therefore be a considerable progress if the same uterus could be utilised for the same experiment. Such experiments were performed and published by Bourne and Burn [2] in 1928. The basis of their experiments were some clinical observations made by Bourne (not published) according to which the uterus responds more readily to pituitrin if œstrin is injected subcutaneously during parturition. Bourne and Burn carried out their experiments by way of alternate addition of pituitrin and water-soluble œstrin to the suspension in which the guinea-pig

uterus was placed. From their results they conclude that there is a synergism between œstrin and pituitrin. I was personally informed, however, by Prof. Burn that this work is not quite unobjectionable, since the œstrin available in 1928 was no pure product and contained several concomitant substances.

Lately Genell [3] has reported that in case of primary inertia uterine contractions may be induced by intramuscular or subcutaneous injections of fairly large doses of œstrin (from 4000 to 10,000 international units).

Clark, Knaus, and Parkes [4] in 1925 showed that rats present great variations with regard to spontaneous uterine movements. These movements, which are fairly rapid during œstrus, become much slower during dioestrus. These authors therefore presumed that the organism of the animal contains more œstrin during œstrus than during dioestrus.

Parkes [5] in 1930 demonstrated that, in pregnant mice, an abortion can be provoked at any moment of the last half of gestation by injection of pituitrin (oxytocin+vasopressin). On the other hand, oxytocin alone will but rarely bring about an abortion. However, if pregnant mice previously are treated with œstrin, oxytocin will be able to provoke abortion just as frequently as pituitrin.

Robson [6] in 1933 showed that the uterus of rabbits during the first three weeks of gestation is very resistant to oxytocin, whereas its sensibility to this hormone increases considerably in the course of the fourth week, reaching its maximum during parturition itself. This also applies to women.[7] Finally, Robson [8] demonstrated that the injection of œstrin into ovariotomised and non-ovariotomised pubescent rabbits gives rise to an increased sensibility of the uterus to oxytocin in vitro and, besides, to an acceleration of the spontaneous rhythmic activity.

In the present note I endeavour to show that, in infantile guinea-pigs, the injection of œstrin gives rise to increased sensibility of the uterus to pituitrin in vitro.

Exp. No.	Weight of animal (g.).	Effective minimum dose of pituitrin.		Œstrin administered.
		Before œstrin.	After œstrin.	
III.	250	0·0002 U.	0·00004 U.	3000 I.U.
IV.	190	0·003 U.	0·001 U.	3000 I.U.
V.	200	0·001 U.	0·0003 U.	3000 I.U.
VII.	150	0·09 U.	0·009 U.	3000 I.U.
		Control experiments.		
A	220	0·0007 U.	0·0007 U.	0
B	200	0·003 U.	0·003 U.	0
VI.	180	0·001 U.	0·001 U.	0

Material and technique.—Infantile female guinea-pigs weighing from 150 to 250 g. are employed. Under ether narcosis and application of sterile precautions one of the uterine horns is carefully removed through a long, oblique cut from the flank downward to the anterior side of the abdomen. The horn is immediately placed into a pituitrin bath, as indicated by Burn and Dale.[9] In order to prevent too vigorous spontaneous contractions, a weight is attached to the writing arm of the apparatus. Both the size and the place of the weight are noted in every individual case.

Next, pituitrin is added to the Ringer suspension and the smallest dose of pituitrin able to produce a visible contraction is determined. Twenty-four hours after the operation the animal receives an injection of 3000 I.U. œstrin dissolved in olive oil.* After the lapse of further 24 hours the animal is killed and the other uterine horn is removed and placed into the pituitrin bath under perfectly similar arrangements—i.e., at the same temperature and with the same weight attached to the same place of the writing arm. Again the smallest amount of pituitrin which gives rise to a visible contraction of the uterus is determined.

* The œstrin administered was of the Ovex Leo brand, manufactured by Løvens Kemiske Fabrik, Copenhagen, to which firm I am indebted for kindly placing both Ovex Leo and Pituitrin Leo at my disposal.

Seven experiments were performed altogether, and three of them were control experiments—that is to say, the animals received no œstrin on the day after operation. (Two of the control experiments, marked A and B, were performed in Copenhagen.) From the accompanying Table it is evident that an increase of the sensibility to pituitrin in vitro was detected in all four cases. In the three control experiments, identical doses were administered both prior and subsequent to partial hysterectomy.

I would like to express my thanks to the Medical Research Council and to Sir Henry Dale, F.R.S., for the hospitality of the National Institute for Medical Research, and to Mr. A. S. Parkes, D.Sc., F.R.S., in whose laboratories the work was done.

BIBLIOGRAPHY

1. Brouha, L., and Simonnet, H.: Compt. rend. Soc. de biol., 1926, xcv., 674.
2. Bourne, A. W., and Burn, J. H.: THE LANCET, 1928, ii., 1020.
3. Genell, S.: Nord. med. tidsskr., 1934, vii., 236.
4. Clark, A. J., Knaus, H. H., and Parkes, A. S.: Jour. Pharm. Exp. Therap., 1925, xxvi., 359.
5. Parkes, A. S.: Jour. of Physiol., 1930, lxix., 463.
6. Robson, J. M.: Ibid., 1933, lxxviii., 309.
7. ,, ,, : Ibid., 1933, lxxix., 83.
8. ,, ,, : Ibid., 1933, lxxix., 139.
9. Burn, J. H., and Dale, H. H.: Med. Research Counc., Spec. Rep. Ser. No. 69, 1922.

HÆMATURIA IN APPENDICITIS

BY WYLIE McKISSOCK, M.S. Lond., F.R.C.S. Eng.

LATE SURGICAL CHIEF ASSISTANT, ST. GEORGE'S HOSPITAL, LONDON; SURGICAL REGISTRAR, HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE, AND HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET

RELATIVELY little has been written about hæmaturia in appendicitis, but I have managed to find records of some 50 cases, many of the papers being more in the nature of annotations than case reports. Seelig [1] in 1908 described three cases and classified the causes as follows:—

1. Toxic nephritis, in which the hæmaturia was caused by the circulation in the blood stream of toxins produced by an acute appendicitis.
2. Direct involvement of the kidney or renal pelvis by an inflamed appendix lying in the retrocæcal position.
3. Direct involvement of the ureter.
4. Direct involvement of the bladder either by an inflamed appendix or by an appendix abscess.

This classification is obviously sound apart from Cause 1. Doubt has been thrown upon this suggestion in the past, notably by Gottlieb [2] in 1924, who concluded that an ætiological relationship between appendicitis and nephritis was by no means proven. Zaffagnini,[3] on the other hand, in two of his six cases, considered the cause of the hæmaturia to be a toxic nephritis due to the appendicular condition. It is undoubtedly difficult to be certain that a toxic nephritis is due to an acute appendicitis present in the same patient.

RELATION TO NEPHRITIS

In many of the published cases, such as the two reported by Wolff,[4] the hæmaturia developed some time after the operation of appendicectomy, and hence it is problematical as to whether the appendicitis was, or was not, an ætiological factor. It seems much more probable that acute appendicitis is sometimes a symptom of a general disease of which

an acute nephritis may also be a symptom or complication. As an example of this the following case may be of some interest.

CASE 1.—A single woman, aged 56, was admitted to St. George's Hospital on April 24th, 1934. She gave a history of severe sore-throat, headache, and loss of voice several days previously and of severe right-sided lower abdominal pain and vomiting for 24 hours. On examination there was some redness and vesiculation of the throat, enlarged tender glands in the neck on both sides, and marked tenderness and rigidity in the right iliac fossa. The temperature and pulse were both slightly raised. The voice was husky. Under Avertin and gas-and-oxygen anæsthesia the appendix was removed in a condition of acute inflammation. The abdomen was then closed. After the operation there was an exacerbation of the laryngitis and tonsillitis and a hæmolytic streptococcus was discovered in almost pure culture from a throat swab. Four days later hæmaturia and albuminuria occurred. Microscopy of the urine revealed red and white blood corpuscles, no organisms, but many granular and cellular casts. Cultures were sterile. Under treatment the condition has slowly cleared up and the patient now passes only a trace of albumin and no blood.

This case is surely one in which the nephritis, and possibly also the appendicitis, were complications of a streptococcal infection of the throat; and it is reasonable to suppose that some of the cases of so-called toxic nephritis complicating appendicitis might be of a similar nature. There is thus little doubt that the production of toxic nephritis by an acute appendicitis is still unproven, and it is only by the publication of further cases with complete records that the truth is likely to appear.

LONG-STANDING SYMPTOMS

Hæmaturia may apparently occur at any age and in association with acute or chronic appendicitis. In the chronic cases the cause is usually the adherence of the inflamed appendix either to the kidney or to the ureter. In Hammersley's [5] case the appendix was densely adherent to the lower pole of the right kidney, whilst in that reported by Ashurst [6] the right ureter was involved.

The symptomatology in the chronic cases is of considerable interest, since pathological conditions have frequently been diagnosed in the genito-urinary, rather than in the alimentary, tract. The symptoms may be those of a typical renal or ureteric colic (Ashurst, Speed), associated with hæmaturia, and it is difficult, indeed, to see how any other diagnosis could be made than that of genito-urinary disease. In one case the diagnosis of ureteric colic was made, and apparently confirmed by the presence of an opacity lying in the line of the ureter on the right side in an X ray plate. At operation the ureter was found to be normal apart from the fact that it was adherent to a chronically inflamed appendix in the lumen of which was lying a stercolith.

Bleeding may continue in the chronic cases over long periods of time, even up to four years (Sciaky [7]), but in the majority of the cases it is of short duration. It may occur either in the early stages before appendicitis be diagnosed (Corner [8]), with the onset of symptoms and signs of acute appendicitis as in the case reported below, or it may develop subsequently as in one mentioned by Cosens [9] and in 12 of the 35 cases collected by Gottlieb. In these latter, as I have already mentioned, the ætiology is relatively unknown.

HÆMATURIA IN ACUTE ILLNESS

It is in those cases where the hæmaturia occurs in association with the signs and symptoms otherwise suggestive of acute appendicitis that confusion is likely to arise. A diagnosis of pyelitis or urinary colic might well be made in the presence of red blood-cells in the urine and the true condition of acute appendicitis be overlooked. In the majority of the cases reported where the hæmaturia and symptomatology of appendicitis coincided the former was due to the presence of inflammatory changes around either kidney, ureter, or bladder. Those inflammatory changes were usually advanced and extensive as in cases reported by Ascoli,[10] Zaffagnini, Sciaky, and others. Hence it is a matter of some importance that the correct diagnosis be made if the patient is not to suffer unduly from delay in treatment.

In the following case the hæmaturia was not noticed, may not even have occurred before admission to hospital, and was only discovered during the routine examination of the urine.

CASE 2. *History.*—A married woman, aged 21, complained that some 48 hours previously she had been seized with sudden, severe, generalised abdominal pain and vomiting. The pain gradually shifted and settled in the right lower abdomen, where it had remained since. She had vomited several times since the onset and the bowels were opened regularly until the morning of the day of admission, when there had been no action. The patient stated that micturition had been normal in every way during the preceding few days and she had noticed no pain, frequency, or blood. The periods had always been regular, the last period having terminated 14 days before the onset of symptoms. There was no history of any previous similar attack.

Examination.—The face was rather flushed, the tongue white and dry, and movement of the abdomen limited over the lower half during respiration. There was tenderness all over the lower abdomen which was most obvious in the right iliac fossa. There was no tenderness in the right kidney region. Rectal examination revealed acute tenderness high up on the right side but no definite mass could be felt. Vaginal examination showed nothing abnormal. The temperature was 102·4° F. and the pulse-rate 116, respiration being normal.

The urine was bright red, and, as bleeding of vaginal origin was suspected, a catheter specimen was taken, only to reveal the same contamination with blood. Microscopic examination of the urine showed large numbers of red blood corpuscles, occasional white blood-cells, and a very few coliform bacilli. There were no casts, crystals, or other organisms seen in a fairly extensive search. Examination of the blood showed a leucocytosis of 36,000, mainly polymorphonuclear leucocytes. General examination of the patient discovered no abnormality in the heart, lungs, or central nervous system.

Apart from the hæmaturia the case appeared to be a straightforward one of perforated appendicitis, and the abdomen was accordingly opened with the provisional diagnosis of acute appendicitis with adhesion of the appendix to the ureter. It was thought that the bladder could scarcely be involved in the absence of any disturbance of micturition and unlikely that the appendix was lying in the retrocæcal position and adherent to the kidney, in view of the lack of tenderness in the right loin.

At *operation*, which was performed under general anæsthesia, a long appendix was discovered running downwards and inwards crossing the bifurcation of the common iliac artery and ending with its tip just in contact with the upper surface of the bladder. The appendix was gangrenous in its middle third, that being the portion in contact with the ureter as it crossed the bifurcation of the common iliac artery. Over its whole course the appendix was adherent to the structures lying deep to it by a mass of plastic exudate. There was free purulent fluid in the lower part of the peritoneal cavity and foul pus was found lying in the right paracolic gutter. Without disturbing the cæcum and after packing-off the intestines above, the appendix was removed as carefully as possible in order not to spread the infection to other parts of the peritoneal cavity. A strip of rubber dam was introduced down to the site of the gangrenous portion of the appendix and the

abdomen was closed, the fatty tissues of the abdominal wall being drained with a small rubber slip.

Subsequent course.—The patient made a relatively uninterrupted recovery after operation and the incision was completely healed at the end of three weeks. The urine was completely free of blood by the third day after operation to macroscopic tests. Microscopic examination did show a few red blood-cells and occasional coliform bacilli ten days after operation, but at no period was there any evidence of true urinary infection as evidenced by pain or frequency.

A month after operation the blood-urea was 22 mg. per 100 c.cm., the urine urea 14 g. in 1500 c.cm. (at rest in bed), and a Uroselectan radiogram showed nothing abnormal in the region of the right ureter. Cystoscopy a week later showed a normal efflux from both ureteric orifices and a healthy vesical mucosa. The excretion of indigo-carmine was normal in time and amount.

The patient was seen two months after the original operation and was in apparently perfect health.

It seems unquestionable that in this particular case the site of bleeding was the ureter, the only point worth discussing being the cause of the bleeding. It may be said to be due to congestion of the veins of the ureter by the pressure of inflammatory exudate outside, or to the occurrence of a true inflammatory ureteritis; but in view of the absence of urinary symptoms throughout, it seems probable that the former is the correct hypothesis.

BIBLIOGRAPHY

1. Seelig, A.: Ann. of Surg., 1908, xlviii., 388.
2. Gottlieb, J. G.: Zeits. f. urol. Chir., 1924, xv., 30. (Abstr. Internat. Abstr. Surg., 1924, xxxix., 390.)
3. Zaffagnini, A.: Arch. ital. di urol., 1927, iii., 377. (Abstr. Zeits. f. urol. Chir., 1927, xxiii., 427.)
4. Wolff, S.: Zeits. f. Kinderheilk., 1931, li., 662. (Abstr. Zeits. f. urol. Chir., 1932, xxxiv., 233.)
5. Hammersley: New Zealand Med. Jour., 1909–10, vii., 13.
6. Ashurst, A. P. C.: Jour. Amer. Med. Assoc., 1922, lxxix., 2135.
7. Sciaky, E.: Policlin., 1926, xxxiii. (sez. prat.), 1353.
8. Corner: Med. Press and Circ., 1911, n.s. xcii., 15.
9. Cosens, W. B.: THE LANCET, 1909, ii., 1469.
10. Ascoli, M.: Policlin., 1925, xxxii. (sez. prat.), 385. (Abstr. Zeits. f. urol. Chir., 1925, xviii., 450.)

THE RECENT WAVE OF STREPTOCOCCAL INFECTION

BY H. L. WALLACE, M.B., F.R.C.P. Edin.

ASSISTANT PHYSICIAN, ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN AND LEITH GENERAL HOSPITAL; AND

A. BROWNLIE SMITH, M.D. Glasg., F.R.C.S. Edin., D.P.H.

ASSISTANT AURAL SURGEON, ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN AND LEITH GENERAL HOSPITAL

(From the Statistical Research Department, Royal Infirmary, Edinburgh)

WHEN considering the incidence of any particular disease there is a tendency to be guided over-much by personal impression which cannot always be substantiated by statistical analysis. During 1933 and 1934 we have had the impression, and have frequently heard the opinion expressed by others, that there has been a definite increase in the incidence of streptococcal infections in general, and of acute rheumatism, mastoiditis, and throat infection in particular. These affections appeared to be specially prevalent during the summer and autumn of 1933 and the early part of the present year. Also during this time it is known that there occurred in Edinburgh an exceptionally large epidemic of scarlet fever. The purpose of this paper is to attempt, by quoting figures, to arrive at the truth regarding both the actual incidence and the comparative incidence of certain streptococcal diseases and to investigate the validity of personal impressions.

In order to do this we obtained from the public health department the annual number of scarlet fever notifications in the Edinburgh area from January, 1929, to March, 1934, inclusive. Further, the number of cases of acute rheumatic infection admitted to the Royal Infirmary and the Royal Hospital for Sick Children from the Edinburgh area during this period has been determined and the same has been done with cases of acute mastoiditis admitted to the ear and throat department of the Royal Infirmary under the charge of Dr. J. S. Fraser. Regarding the latter cases, it must be stated that it is only those which were proved to be due to the hæmolytic streptococcus which have been included, and all non-streptococcal cases are eliminated. The incidence of notified erysipelas has also been determined for the same period. These diseases have been selected, since it is comparatively simple to obtain accurate figures regarding their incidence, at any rate amongst the hospital population. It would have been interesting also to have included cases of streptococcal throat infection, but as a high proportion of these never reach the wards of a hospital it would be well-nigh impossible to obtain figures representative of their true incidence. The following Table shows the number of cases of the various streptococcal infections during the last five years:—

	Scarlet fever.	Acute rheumatism.	Mastoiditis.	Erysipelas.
1929 ..	1154	118	16	338
1930 ..	1278	136	15	339
1931 ..	647	109	16	280
1932 ..	1080	118	20	340
1933 ..	4551	179	35	382
1934* ..	1128	79	14	145

* First quarter.

The figures in this Table are also shown graphically for ease of comparison, and for the purpose of control the incidence of diphtheria is shown for the same five-year period (see Figure). The most striking feature about the graph is the rise occurring during the year 1933, this rise being common to scarlet fever, acute rheumatism, and acute mastoiditis, and, to a lesser degree, to erysipelas, whereas the diphtheria incidence appears to run a completely independent course. There is also a high incidence of all four conditions during the first quarter of 1934. It may be argued that the number of cases of acute rheumatism and acute mastoiditis is too small to enable definite conclusions to be drawn, but the strikingly increased incidence of both these diseases, occurring coincidently with the large scarlet fever epidemic, seems at least to be significant. Further, it must be remembered that the rheumatism figures and mastoid figures represent only a proportion of the total cases occurring in the city, since they do not include cases of these diseases occurring in the non-hospital population. The scarlet fever figures, on the other hand, may be said to represent the total cases occurring in all grades of society for the area under consideration.

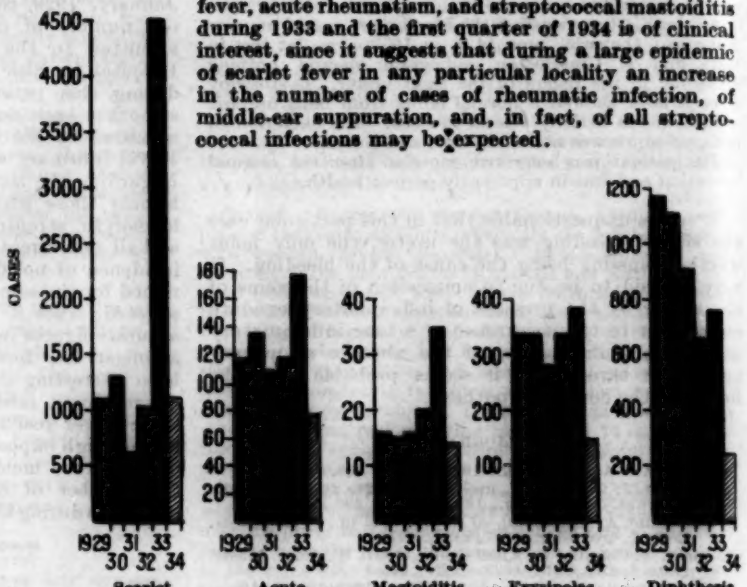
DISCUSSION

The result of this investigation seems to confirm the personal opinions which have been expressed regarding the increased incidence, during 1933 and

1934 in the Edinburgh district, of acute rheumatic infection and acute mastoiditis. This is of particular interest in view of the exceptionally large epidemic of scarlet fever which occurred during this time. It might be expected that if these three diseases are due to infection with a hæmolytic streptococcus their yearly incidence would run a comparatively similar course and the figures obtained in this analysis show some degree of parallelism from year to year. This is most evident when the incidence of scarlet fever and acute rheumatism is compared. We would make it quite clear that the cases of rheumatism and mastoiditis referred to above had no apparent connexion with scarlet fever, and all cases of arthritis and mastoiditis arising as a direct complication of this disease are automatically included in the scarlet fever figures and not under the heading of acute rheumatism or mastoiditis. A point of interest arises in connexion with this, however, since it is possible that a proportion of the cases included under rheumatism or mastoiditis may have been in reality cases of missed scarlet fever. If the rash were fleeting and the general symptoms very mild, then it is possible that some complication such as acute arthritis or middle-ear suppuration may have been the first indication of the disease. We would add, however, that we have endeavoured, so far as is possible, to overcome this fallacy, and it is probable that the great majority of the cases, both of acute rheumatism and acute mastoiditis, were unassociated with scarlet fever. It would seem that during the period under discussion some factor or factors have been acting either to increase the virulence of the *Streptococcus hæmolyticus* or to lower individual resistance to this organism. This surmise is interesting when it is remembered that the year 1933 was unusually warm and dry, and when the high sunshine record might have been expected to increase the resistance of the individual to disease. On the other hand, the incidence of scarlet fever in the city of Edinburgh was considerably below the average during the five-year period 1928–32, and one might assume that the index of susceptibility of the population in the year 1933 was unusually high. By the susceptibility index we mean the ratio of individuals who have not suffered from scarlet fever to the general population.

The influence of climatic conditions on the incidence of disease constitutes a problem of great complexity, since so many factors have to be taken into consideration before it is possible to draw accurate conclusions. In view of the high sunshine and low rainfall experienced during 1933 and the first quarter of 1934, it was thought possible that the striking wave of streptococcal infection in the Edinburgh area might be explained, to some extent at any rate, by the rather exceptional climatic conditions. If the streptococcus be dust-borne then it seems reasonable to suppose that a serious, long-continued drought, such as that experienced during the past two years, may have been a factor in facilitating the spread of streptococcal infection. It is possible that at a period when the susceptibility index is high the occurrence of an unusually prolonged spell of dry weather may have some significance as a causative factor in precipitating an epidemic of scarlet fever and raising the incidence of other streptococcal infections.

The high incidence revealed in the graph of scarlet fever, acute rheumatism, and streptococcal mastoiditis during 1933 and the first quarter of 1934 is of clinical interest, since it suggests that during a large epidemic of scarlet fever in any particular locality an increase in the number of cases of rheumatic infection, of middle-ear suppuration, and, in fact, of all streptococcal infections may be expected.



Graph showing yearly incidence of the various infections.

SUMMARY

The incidence of notified scarlet fever and erysipelas and hospital cases of acute rheumatism and acute mastoiditis in the city of Edinburgh is shown for a five-year period. It is evident that during the year 1933 and the first quarter of 1934 a marked increase in the number of cases of acute rheumatism and acute streptococcal mastoiditis occurred coincidently with an exceptionally large epidemic of scarlet fever. It is suggested that the effect of an unusually hot, dry season on a highly susceptible community may have been a factor in producing this wave of streptococcal infection.

We wish to record our thanks to Dr. J. S. Fraser for helpful advice in connexion with this paper.

WEYMOUTH EYE INFIRMARY.—Lady Ilchester has opened the new Weymouth and Dorset County Royal Infirmary. The work there has become increasingly heavy during the last few years, but it is now hoped that the new building may meet the needs of the county for the next 30 or 40 years.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.—Two gifts towards the rebuilding of this hospital were announced by the Princess Royal at a Mansion House meeting on Dec. 11th. Mr. Charles Johnson, a member of the committee of management, has given £10,000 to provide a medical ward to be called after the Princess Royal; and another donation of £50,000, payable in seven equal annual instalments, was promised by Lieut.-Colonel Stanley Cohen, vice-chairman of the hospital. The scheme of reconstruction was described in our issue of Nov. 24th, p. 1900.

Clinical and Laboratory Notes

AN ANALYSIS OF 1758 SCHICK TESTS IN NIGERIAN NATIVES

BY J. CAUCHI, M.D. Malta, D.P.H.
SENIOR HEALTH OFFICER; AND
E. C. SMITH, M.D. Dub.
SENIOR PATHOLOGIST, WEST AFRICAN MEDICAL STAFF

DIPHTHERIA does not hold an important place among the diseases of Southern Nigeria, being almost unknown in the clinical type common to the more temperate regions. The disease has been recorded from Kaduna (Northern Nigeria), from the Gold Coast, and from Sierra Leone. Although we have seen no diphtheria in Lagos, severe cases of sore-throat, some with patchy ill-defined membranous formation, have been encountered. Swabs taken from a small number (20) of them have been cultivated on blood-agar plates containing potassium tellurite. The composition of this media was similar to that used by Horgan [1] in Khartoum. In three instances a Gram-positive bacillus was obtained which gave the sugar reactions of *Corynebacterium diphtheriæ* (acid with glucose and galactose, no action with saccharose). None of the strains isolated showed any virulence for guinea-pigs. Through the kindness of Prof. J. C. G. Ledingham, one strain was examined at the Lister Institute, London, and was reported as being of the mitis type (avirulent) of diphtheria bacilli.

The advisability of investigating the relative immunity of Nigerian natives was considered, and Dr. R. A. O'Brien, of the Wellcome Research Laboratories, kindly provided sufficient Schick toxin to make practicable a preliminary examination of approximately 300 Africans. The results were encouraging and it was decided to continue the investigation on a more extensive scale. A sample of toxin, kept under similar conditions to that used in the tests, was returned to Dr. O'Brien at his request and on estimation was found to have suffered no diminution in potency.

In all, 1758 Africans were tested, using the standard method of double inoculation (toxin in left arm, control in right). It was interesting to note the ease with which the results could be read in pigmented skins. The positive reactions were well marked and consisted in most instances of a distinctive alteration in the colour and appearance of the skin, amounting to a definite flush in many cases. Usually the site was raised above the surrounding skin and frequently the area was papular and finely wrinkled. Desquamation sometimes followed. After several hundred reactions had been examined it was found that the results were clearest and therefore easiest to read about the fifth day following inoculation and all further readings were made accordingly.

Of the 1753 tests, 1093 were in males and 660 in females. The total number of positive results (non-immunes) obtained was 337 (151 males and 186 females). These figures represent 19 per cent. of all cases, 13·7 per cent. of males and 28·6 per cent. of females. The relation of age and sex to the number of positive results is shown in the accompanying Table.

From these figures it appears that about 30 per cent. of the natives examined in Southern Nigeria are Schick-positive during the first year of life. For ages up to ten years approximately 20 per cent. are susceptible (Schick positive) and from that age onwards almost complete immunity seems to prevail.

Age.	Tests.	Males.	Per cent. positive.	Females.	Per cent. positive.	Total per cent. positive.
1 to 12 months ..	46	46	32·6	0	—	32·6
1 to 10 years ..	1409	786	15·6	623	30·6	21·7
10 to 15 ,, ..	248	211	0·9	37	8·1	2·0
15 to 20 ,, ..	50	50	2·0	0	0	2·0

It is of interest to compare the results obtain in the present series of tests with some of those obtained by other workers in both non-tropical and tropical areas. Topley [2] quotes Zingher's figures from which the following have been taken.

For age-groups of 6 to 12 months the percentage of positive Schick reactions varies from 56·6 to 91·1. For the age-group of 1 to 3 years the percentage is 83·2. The rate then continues to diminish until for the age-group 9 to 10 the percentage of positive Schick reactions is 32·2. For the age-groups of 10 to 15 years the percentage has become further diminished and varies from 29·3 to 19·7.

Prof. J. W. Bigger, as a result of Schick tests performed on medical students in Dublin University over a number of years, informs us that 70 per cent. of positive findings is usual. Saunders [3] comments upon the prevalence of diphtheria in Cork city and in a series of Schick tests he obtained a percentage of 28·9 of positives for those aged ten and over.

As regards the figures obtained in other tropical areas Robertson,[4] in Malaya, obtained 30·5 per cent. of positive reactions in children at ages varying from five to ten years and 34·5 per cent. in those aged ten to fifteen. Fischer,[5] in East Africa, obtained only three positive results in 222 tests carried out on children aged seven to thirteen.

It is apparent then that the percentage of non-immunes (positive Schick-reactors) of the natives of Southern Nigeria is much lower than that prevailing in temperate countries. Compared with other tropical countries the results obtained in Lagos (Southern Nigeria) are somewhat similar to those found in East Africa, but the rate of Schick-positive reactors is much lower than that quoted for Malaya where diphtheria is prevalent. The higher non-immune rate in girls is demonstrated by the present series of tests and suggests that they are roughly twice as susceptible as boys.

Summary.—In Lagos 1454 native children under the age of ten showed Schick-positive percentages of from 15 to 30, while 298 over ten yielded only 2 per cent. Though clinical diphtheria is almost unknown, natural immunisation by subclinical infection appears to be active.

We are indebted to the Director of Education for his kind permission to test the children attending the Government schools, also to the heads of the various religious bodies for their kind coöperation in this work, and finally to the director of the Medical and Health Service for his permission to publish.

REFERENCES

1. Horgan, E. S., and Marshall, A.: Jour. of Hyg., 1932, xxxii., 544.
2. Topley, W. W. C.: An Outline of Immunity. London, 1933, p. 148.
3. Saunders, J. C.: Annual report for the Borough of Cork, 1933, p. 16.
4. Robertson, E. A.: Malayan Med. Jour., 1931, vi., 59.
5. Fischer, O.: Zeits. f. Immunitätsf. u. Exper. Therap., 1932, lxxiv., 244.

CHOREA TREATED BY INJECTION OF DISTILLED WATER

By G. Arbour Stephens, M.D. Lond.
CARDIOLOGIST TO KING EDWARD VII. WELSH NATIONAL MEMORIAL ASSOCIATION

Those who have had experience in the treatment of chorea know how difficult it is to deal with patients whose movements are so excessive as to interfere with sleep. For severe spasms it has been the custom to rely on bromide and chloral, which however need to be administered with great care to avoid the subsequent mental disturbance. Other drugs such as aspirin and arsenic have hardly any effect in cases with severe spasms and even the good effects of chloroform soon pass off. The following case is given in order to show another means of subduing successfully the excessive spasm—namely, by means of the subcutaneous injection of distilled water.

A girl of 14 was admitted to hospital after suffering for a fortnight at home. On admission she was placed as usual on calcium lactate and parathyroid in the large dose of half a grain of the dried gland. These drugs usually have a good effect. In this case, however, the spasms were so excessive as to prevent sleep as well as the use of her voice. At my suggestion she was then given subcutaneous injections of distilled water, 10 c.cm. daily, and two nights later she was able to sleep fairly comfortably. This improvement has been maintained and at the end of a fortnight, during which she has had altogether eight injections, she was able to sit up in bed and feed herself with minced meat, using a spoon. My experience of the soothing effects following the use of distilled water has been highly satisfactory too in other cases in which the movements have been severe.

How is one to explain the effect of distilled water? When I first drew attention to its value (Brit. Med. Jour., 1913, i., 706) I pointed out that distilled water has a high surface tension and I suggested that the introduction of such a liquid has a modifying effect on the surface tension of all the cells with which it comes in contact. Modification of a cell's surface tension tends to modify its metabolism and secretion.

ANTIMONY DERMATITIS TREATED WITH SODIUM THIOSULPHATE

By A. Fakhry, M.B. Cairo
PRINCIPAL MEDICAL OFFICER, BILHARZIA AND ANKYLOSTOMA HOSPITAL, CAIRO (SHOUBRA), EGYPT

As long ago as 1929 I reported to the department of public health of Egypt two types of tartar emetic rash: one a papular type which is fairly common, and the other a scaly type which is rather rare. The case here reported shows that the rash may follow administration of Fouadin (sodium antimony pyrocatechin-disulphonate) also, and that it is due to susceptibility to antimony preparations.

The patient is a girl aged 22, weighing 56 kg., with a *Schistosoma hæmatobium* infection of the urinary tract. Clinical examination showed no contra-indication to fouadin treatment, and she was given the first injection of 1·25 c.cm. on July 12th. On the 14th she had a fine papular rash, not very well defined but very slightly raised above the surface of the skin. It was confined to the back of the hands and forearms, the sides of the neck, and upper part of the chest. There was also an abnormal flush on the cheeks. The temperature was 37° C. The patient complained of generalised pain all over the body, and severe itching of the affected parts. On July 14th she was given the second injection of 2·75 c.cm., and on the next day the rash had become more apparent, with a wider distribution. On July 17th the eruption was markedly papular, covering the whole body, but less obvious on the thighs. The face was puffy and covered with a minute papular eruption. The rash on the hands and forearms was characteristic: it consisted of hard shotty pearl-like papules, raised above the surface of the surrounding skin. Some of them were confluent, forming larger papules. The palms were also affected; owing to the tenseness of the palmar fascia the papules were not much raised, but they appeared white and felt shotty. The epitrochlear, the axillary, and the inguinal glands were slightly enlarged and their tenderness was one of the main complaints of the patient. There was intolerable itching and hot sensation of her skin, so much so that she tolerated her clothes with difficulty. There was a definite circumoral pallor somewhat resembling that of scarlet fever. The mouth and throat were normal, and there was an irritable dry cough, but the chest was clear.

On going into the history more carefully the patient produced the very interesting information that a year previously she had been given tartar emetic injections in another "bilharzia" hospital, and had begun to develop a similar rash after the second injection. At that time the rash started on the dorsum of the feet instead of the dorsum of the hands. Administration of tartar emetic was stopped.

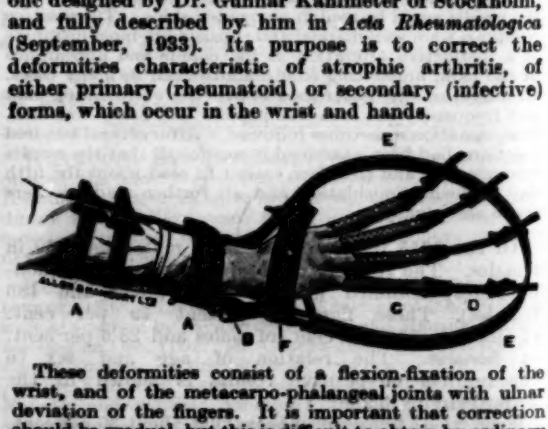
In the treatment of this rather severe case I tried sodium thiosulphate used as in arsenobenzol dermatitis. The use of fouadin was discontinued, and on July 17th she was given an intravenous injection of 10 c.cm. of 10 per cent. sodium thiosulphate solution. On the 18th the puffiness of the face disappeared and the rash on the face, abdomen, and back was only slightly apparent; that on the hands and forearms diminished considerably, but remained the most conspicuous part. The glands were still slightly enlarged, but less tender. The patient was much better. On the 18th she was given the second injection of sodium thiosulphate. She did not attend again until July 24th because she felt better, and by that time she was completely cured.

Antimony dermatitis is common, but it is usually very mild and needs no treatment. The rapid effect of sodium thiosulphate in the above case is worth recording.

NEW INVENTIONS

CORRECTION APPLIANCE FOR FINGERS AND WRIST

The apparatus here depicted is a modification of one designed by Dr. Gunnar Kahlmeter of Stockholm, and fully described by him in *Acta Rheumatologica* (September, 1933). Its purpose is to correct the deformities characteristic of atrophic arthritis, of either primary (rheumatoid) or secondary (infective) forms, which occur in the wrist and hands.



These deformities consist of a flexion-fixation of the wrist, and of the metacarpo-phalangeal joints with ulnar deviation of the fingers. It is important that correction should be gradual, but this is difficult to obtain by ordinary splinting because the individual joints may be involved in varying degree and must therefore be treated separately. On the other hand, forcible manipulation of contractures

in atrophic arthritis is contra-indicated on the following grounds: (1) Not only are the intra- and peri-articular adhesions in these cases extremely firm, but the bones are decalcified, and there is a consequent risk of fracture. (2) Considerable reaction follows manipulation of joints the subject of atrophic arthritis, resulting in pain and increased stiffness. (3) Improvement in alignment obtained by force is always gained at the expense of loss of strength. A misshapen but strong hand is more useful than a straight but weakened one.

This apparatus is held by the forearm, both below the elbow and above the wrist, by wide leather straps (A). Gradual extension of the wrist is obtained by means of the rachet screw (B). The fingers are held in extension by plaited finger-stalls (C) which can be easily applied, and are stretched by means of rubber tubes (D). The latter are fitted with hooks which can be inserted into a series of slots in the aluminium frame (E). In this way the fingers can gradually be pulled towards the radial side, thus correcting the ulnar deviation. Pressure is meanwhile maintained on the metacarpo-phalangeal joints by means of a padded strap (F) in order to correct the flexion-fixation of these joints. The apparatus is light and can be held in any position. It should be applied daily, at first for short periods, according to the tolerance of the patient. Later the duration of application can be increased, and the apparatus adjusted to meet the response of the individual joints.

FRANK HOWITT, C.V.O., M.D. Camb.

MEDICAL SOCIETIES

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY

THIS society met at Sheffield on Nov. 23rd, with Prof. DANIEL DOUGAL (Manchester), the president, in the chair.

Gynæcological Cases

The PRESIDENT described a case of malignant *ovarian tumour* removed five years after radium-induced menopause.

He operated on the patient in 1929, when she was 41, for excessive and frequent loss without uterine enlargement; 100 mg. of radium was inserted into the uterus for 22 hours and a cure resulted. She was quite well till this year, when she complained of discomfort and swelling in the lower abdomen. At operation a carcinoma of the left ovary was found, and panhysterectomy with removal of both appendages was done. Microscopical examination of the uterus showed a single layer of epithelium and fibrosis. The growth had obviously no relation to the previous treatment; but it was something of a shock to meet with a carcinoma developing in a patient who, a few years ago, would have undergone panhysterectomy with removal of her ovaries for her first complaint of excessive loss.

Mr. ST. GEORGE WILSON (Liverpool) reported a case of *angular pregnancy*.

The patient, aged 26, was pregnant for the third time. Her first pregnancy was terminated for hyperemesis; the second went to full term, after trouble with vomiting in the early months. Her last menstrual period was on Sept. 1st, 1934, and vomiting began on Oct. 7th. She was admitted to hospital on Oct. 11th; albumin and acetone were found in the urine, and the blood pressure was 110/60 On bimanual examination the uterus was retroposed and bulky, with a soft bulge to the left; the main body felt normal in shape and consistency, the size being that of an eight weeks' pregnancy. The uterus was replaced and a ring pessary inserted; treatment with daily enemata, rectal salines with glucose, and insulin was begun. On Oct. 25th the pulse-rate rose to 120 and slight jaundice was present. Besides albumin and acetone, the urine contained excess of urobilin, many organisms, and hyaline and granular casts. Mr. Wilson decided to induce abortion. Lipiodol was injected into the uterus under spinal anæsthesia, and X ray films were taken at different stages. This did not start abortion, and so 24 hours later a No. 10 catheter was inserted without an anæsthetic. Abortion was complete after 48 hours. Vomiting occurred for a day or two after this and then stopped. The patient was discharged on Nov. 15th. Mr. Wilson expressed the opinion that the case was one of angular pregnancy, which was the cause of the hyperemesis.

Mr. J. E. STACEY (Sheffield) described a *pancreatic cyst* from which 46 pints of brownish fluid containing cholesterol were aspirated, and also an *adenomyoma* of the recto-vaginal septum complicating a two months' pregnancy in a nullipara aged 39, married for 13 years. He then went on to report five cases of *epithelioma of the vulva*, treated in the first instance with radium. At intervals varying from three months to two years after the radium treatment excision of the vulva with the diathermy knife had been done, owing to extension of the growth or severe local pain or both. The radium dosage in specified cases was applied in the form of 25 needles, each of 3 mg., for 72 hours, to the ulcer and regional glands. Sections taken after the radical operation showed radium burns in two cases, and epithelioma was present in all. Mr. Stacey had been impressed for some time by the ineffectiveness of radium treatment for vulval carcinoma. He found that when the ulcer failed to heal, extension was rapid and radium burns caused such intense pain that local excision was soon demanded. He suggested that a judicious combination of radium and excision at the start, with the addition of deep X rays, was perhaps the solution of the problem.

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the section of surgery on Nov. 23rd, with Mr. SETON PRINGLE, the president, in the chair, a paper on

Intratracheal Anæsthesia

was read by Dr. R. W. SHAW. The method, he said, was first practised about the year 1886, the apparatus used being a modification of that designed by Fell and O'Dwyer for intubation in cases of laryngeal diphtheria. Its great advantage was that it permitted, for the first time, operative surgery in the thoracic cavity. Improvement in technique continued between 1900 and 1910, but comparatively little progress was made during the late war. Up to 1920 the method in use was known as "insufflation endotracheal anæsthesia," but in that year Rowbotham and Magill reported their experiences of what they termed "inhalation endotracheal anæsthesia." The essential difference between the two was that with insufflation the anæsthetic vapour was delivered into the trachea under pressure through a catheter not large enough to fill the rima glottidis; air was then expired round this catheter. With the inhalation technique on the other hand, the catheter used was of such size as to almost occlude the laryngeal cleft, and the patient breathed in and out through the tube, no pressure (or very low pressure) being used. This method, which had now completely

displaced the older method of insufflation, was simple to use, once skill and facility in the introduction of the catheter have been achieved. The catheter might be introduced either through the nose or through the mouth. If it was introduced through the nose the "blind" method described by Magill might be adopted, or a laryngoscope and special forceps might be necessary. If introduced through the mouth the catheter was always passed by direct vision with a laryngoscope. Any efficient gas-oxygen-ether machine could be used for maintenance of anæsthesia, and a minimum of ether was required. The patient must first be anæsthetised by a gas-ether sequence, or basal anæsthesia combined with cocainisation of the larynx might be found more convenient. In an experience of over 40 cases Dr. Shaw had found the method entirely satisfactory, more especially for the surgery of the head and neck.

The PRESIDENT said that very often intratracheal anæsthesia was of the greatest possible service, but in his opinion it would never come into any very widespread use. He did not think it was required in cases of non-toxic goitre, and in these he personally had found the block method very satisfactory.—Mr. R. ATKINSON STONEY referred to the amazing change in the giving of anæsthetics during the last 30 years; he felt, however, that in spite of the improvements there had also been an increase in the complications of anæsthesia.—Mr. T. J. D. LANE said he thought intratracheal anæsthesia was the best method in many cases.—Mr. WILLIAM DOOLIN believed that in the last five years anæsthesia had developed even more quickly than surgery, and had developed in response to the surgeon. He was convinced that intratracheal anæsthesia was the method of choice in facial surgery, especially in cases of cleft palate.—Mr. ARTHUR CHANCE said he felt very confident regarding this method of anæsthesia. It was of great value in thoracic surgery.—Dr. J. J. FITZSIMONS said he had not used gas-and-oxygen intratracheally, but he had used McKesson's apparatus. On getting the laryngoscope at the side of the mouth it was possible to see the epiglottis more easily.—Dr. T. G. WILSON spoke of the favourable results of intratracheal anæsthesia in laryngology. He considered that the method was the safest and best for operations on the upper air-passages. It dispensed with the nuisance of the nasopharyngeal plug.

REVIEWS AND NOTICES OF BOOKS

Taylor's Principles and Practice of Medical Jurisprudence

Ninth edition. By Prof. SYDNEY SMITH, M.D., F.R.C.P. With a complete revision of the legal aspect by W. G. COOK, LL.D., barrister-at-law. London: J. and A. Churchill Ltd. 1934. 2 vols. Pp. 973 and 878. 63s.

Alfred Swaine Taylor first published in 1865 his "Principles and Practice of Medical Jurisprudence." So solid was his pioneer work that the ninth edition, now just published, is still largely based upon the data he collected long ago. His own forensic experiences were notable and varied. He gave evidence on the toxicity and properties of strychnia in the case of Palmer of Rugeley, one of the earliest instances of its kind. In R. *v.* Tawell he had to deal with the defence that prussic acid had entered the body through the pips of apples which the victim had eaten. Himself an almost ideal expert witness in his blend of caution and authority, he published advice on the methods of giving evidence which is as sound as ever. But naturally each fresh edition of his book has to take account of fresh developments of scientific knowledge. Thus in toxicology the new edition includes the thiocyanate test for prussic acid, the electrolytic method (described by Young and Taylor) for determining mercury in tissues and body fluids, and fresh paragraphs on poisoning by alloys of mercury, aspirin, thymol, nembutal, thallium, aniline, cobalt, organic arsenical compounds, radio-active metals, and manganese. Recent investigations of the pathology of French munition-workers during the late war are drawn upon for new knowledge of the effects of dinitro-phenol and dinitro-cresol. There are notes on the danger of copper amalgams in dental work, the Newcastle case of the lemonade crystals in 1928, and the evidence offered against Mrs. Hearne in 1931, where not only did the defence suggest that the body in the Cornish grave had been contaminated by the arsenical impregnation of the surrounding soil, but it was also matter of comment that at the exhumation jars containing viscera had been left uncovered in the graveyard. The chapters on poisons, of course, form but a part of these comprehensive volumes. There is a summary of the Aschheim-Zondek test, and the Friedman test is included in a brief discussion of biological criteria of pregnancy. There is fresh treatment of the attractive science of blood grouping which has already begun to demonstrate its medico-legal value, even if its chief value at present is the cautious proof of a negative in certain disputes about paternity. What seems to be a new paragraph deals with powder-marks in firearm wounds, and there is naturally an account of Sir Bernard Spilsbury's evidence in Rouse's case. On the legal side, if there has not yet been time to record the working of the Pharmacy and Poisons Act of 1933, several other recent enactments are noted—e.g., the Mental Treatment Act of 1930 with its system of voluntary and temporary patients and its substituted clause (replacing Section 330 of the Lunacy Act) attempting to protect doctors from risks revealed in Harnett *v.* Bond and similar proceedings, the Sentence of Death (Expectant Mothers) Act, the Infant Life (Preservation) Act.

In the field of litigation the general view of professional negligence stands where it was placed by Lord Hewart in R. *v.* Bateman in 1925, but the editors have rewritten the sentences about the surgeon's legal responsibility for a nurse's negligence, and reference is made to the Glasgow Royal Infirmary case (1933) where the House of Lords considered the distinction between matters of professional skill and purely administrative duties. Thomas *v.* Jones is mentioned for the fresh light it throws on the validity of a will where the testator was mentally competent when giving his solicitor the necessary instructions but was of doubtful capacity at the moment of executing the will. The unpleasant case of R. *v.* Hare is shown to fill a gap in English forensic records of a woman's culpability for an indecent assault upon a male or another female. The passages which deal with workmen's compensation seem to have undergone little revision, and a footnote reference to two recent decisions on miner's nystagmus is somewhat jejune. The editors wisely do not pay too much attention to the dicta of Mr. Justice Swift at Liverpool assizes last February at the trial of a lorry-driver accused of drunkenness. In securing an acquittal the judge declared that an accused person cannot be medically

examined without consent, and can give no consent unless sober. The Home Office is understood not to have been greatly disturbed by these observations, but they might have placed the police in a serious dilemma; they appeared to suggest that the results of medical examination were either legally inadmissible evidence or else prima facie evidence of sobriety. The very brief footnote in this connexion (on p. 635 of Volume II.) might perhaps have been linked up with the general advice on medical examination in Volume I. Elsewhere indeed similar cross-references would be helpful. A paragraph on p. 542 of Volume I. on lightning as an accident for purposes of workmen's compensation (partly based on Kelly's case, for which no reference is given) might well have been transferred to, or somehow connected with, the fuller treatment of the matter on p. 725. But on the whole there is little to criticise in the editing and indexing of a publication which is now better modernised than ever before.

Taylor himself had no love of the system which brings in medical experts as witnesses for one side or the other in the law courts. He looked forward to the day when they would act as independent assessors free of any taint of partisanship. The "new procedure" in civil proceedings in the High Court is a step towards Taylor's ideal, though the step is being taken with some hesitation. Be that as it may, in whatever capacity physicians or surgeons are concerned with any medico-legal problem, they will scarcely fail to find help in this new edition of Taylor's classic work.

Acute Otitis and Mastoiditis in General Practice

By N. ASHERSON, M.A., M.B., B.S. Lond., F.R.C.S. Eng., Assistant Surgeon, Central London Throat, Nose, and Ear Hospital. London: H. K. Lewis and Co., Ltd. 1934. Pp. 96. 10*s.* 6*d.*

THE suggestion made by Mr. Asherson that instruction about acute lesions of the ear is "tucked away" in the special text-books, is, we feel, hardly fair; in our experience they are usually given a prominent position. Nevertheless, a small book confined to the study of these diseases from the clinical aspect may well be acceptable to the general practitioner but, indeed, a number of books of this sort have been published. Much of the subject matter which forms this volume was originally put together in the form of lectures to post-graduates, and this accounts for repetition which, while not out of place in a series of lectures, becomes rather tiresome and confusing in a text-book.

Mr. Asherson's treatment of his subject mostly follows orthodox lines. His differentiation between suppurative and non-suppurative forms of acute otitis is somewhat too sharply drawn, especially as he regards extremely acute pain as a common and characteristic symptom of the latter condition; and we are unable to follow his distinction of a moist and a dry appearance of the inflamed drum when no perforation has occurred. He performs myringotomy by incision from above downwards, and advocates frequent syringing in the after-treatment. He views with rather too much complacency the persistence of a perforation of the drum as a sequel of acute otitis, although he does state that chronic otorrhœa should never be allowed to occur; in consequence, he does not mention discharge persisting for more than a few weeks among the indications for antrotomy, although it is now generally recognised that timely operation in this condition is of great value in preventing deafness, permanent perforation, and chronic otorrhœa. For the rest, his teaching contains sound advice; especially useful is his insistence on the different importance of such symptoms as pain and tenderness before and after the establishment of free discharge. There is also in the book a good description of mastoid swellings in atypical positions, and of the peculiarities of acute otitis in childhood and in the acute fevers. The operative treatment of mastoiditis and its complications is only briefly discussed, the book not being written with an eye on the operating surgeon, but a more detailed account of the treatment after operation would have been helpful. A useful list of the causes of post-operative pyrexia is, however, supplied in which extraneous causes, frequently overlooked, such as otitis of the other ear, receive due mention.

---

1. Applied Eugenics

Revised edition. By PAUL POPENOE and ROSWELL HILL JOHNSON. London: Macmillan and Co., Ltd. Pp. 429. 12*s.* 6*d.*

2. Constructive Eugenics and Rational Marriage

By MORRIS SIEGEL, M.D. Toronto: McClelland and Stewart Ltd. 1934. Pp. 196. 11*s.* 6*d.*

1. The first of these books was originally published in 1918 and has been used in several American schools and universities as a college text-book. It has passed into two editions in the Japanese language. Its title is not altogether appropriate, for the book contains much more discussion of theory than of practice. The first six of the 22 chapters deal with such topics as nature and nurture, modification of the genes, differences among men (this chapter includes a useful discussion of probability curves), the inheritance of these differences, natural selection, and the need for negative eugenics. There follow three chapters on the application of eugenics in the spirit of the title which deal with selective segregation, sterilisation, and contraception. The remaining chapters discuss such topics as the eugenic aspects of war, religion, and race, the improvement of reproductive selection and the eugenic implications of various social and economic measures. The book concludes with a list of references (mostly to American books and papers), a glossary of terms employed and a list of problems of applied eugenics which might be useful to teachers as provocative subjects of essays. Here are two: "Which of the less common characteristics in yourself, your brothers and your sisters can you find in some of your other relatives?" and "Discuss in detail the selective nature of deaths from automobile accidents."

There are two main problems of applied eugenics: what qualities do we consider conducive to useful citizenship and therefore wish to see perpetuated; and by what measures do we propose to realise this end? The reader of this book will get a clear idea as to what qualities we do *not* want to see propagated, and he will learn what is being proposed by certain American eugenists with a view to reducing their incidence in future generations; but he may find his confidence in these schemes shaken because of the opposition raised by the authors to all schemes calculated to improve the conditions of the poor. These, it is assumed, "tend" (a word much used by eugenists) to be below the average in respect of those qualities which conduce to useful citizenship. Hence

we should be careful not to improve their conditions in any way which is likely to promote their fertility. In Chapter 18 we find that the minimum wage, mothers' pensions, old age pensions, non-selective schemes for the improvement of housing, and the trade-union movement as it exists at present are condemned as dysgenic on grounds that certainly lack the scientific basis upon which rest the studies in hereditary differences presented in the first chapters.

2. Dr. Siegel's volume has a message, but unfortunately it is neither clear nor convincing. All the measures of negative eugenics which have hitherto been proposed he regards as, for practical purposes, valueless. In a chapter entitled Constructive Eugenics he advances his remedy. "It is," he says, "our sacred and solemn duty to our children and to future generations to work unceasingly until we find a remedy. There is only one remedy—Preparedness. Preparedness through education." The reader may well ask what principles should be inculcated in this education which the author does not, elsewhere in his book, condemn. The book is written in the hortatory style of one who pleads a cause. It contains several inaccuracies and misprints, and it eulogises the Jews, of whom it says that among those who lived in Russia 25 years ago there was no illiteracy, and that "their families were kept intact and clean."

Practical Methods in Biochemistry

By FREDERICK C. KOCH, Professor of Physiological Chemistry, University of Chicago. London: Baillière, Tindall and Cox. 1934. Pp. 282. 10*s*.

IT is well known to observers of American methods of teaching medicine that very much more attention is paid to the course in practical biochemistry in their universities than is the case in this country. For this reason most American text-books on biochemistry are unsuitable for British medical schools, and this is particularly true of Prof. Koch's book. The exercises are all most clearly described, and there is no doubt that if the British medical student had the time to work through the book he would emerge with a very sound knowledge of the experimental methods of biochemistry; but this would be quite impossible with the existing curriculum. Another criticism from our standpoint might be raised. Prof. Koch uses too many of his own methods or his own modifications of standard methods. This is, of course, desirable and often highly valuable in a large university laboratory such as his, where the students are both taught and examined. If, however, one of the London medical schools were to adopt individual methods the student would be considerably handicapped when sitting for central examinations.

This book, though not suitable for general teaching purposes, can be strongly recommended to those who wish to have available a collection of workable and carefully tried methods.

A Surgeon's China

By ALFRED GERVAIS. London: Hamish Hamilton Ltd. 1934. Pp. 302. 7*s*. 6*d*.

THIS is a brilliant little book. The author spent a certain period, how long is not stated, in a far province in Western China, and became fascinated with the problems presented by Chinese mentality. His duties brought him into intimate connexion with all sorts of Chinese men, women, and children, and episodes result that are terrible by their implications, incredible from the native simplicity displayed, humorous often, and sometimes medically interesting. Dr. Gervais has written in no sense a historical, political, or medical book about China, nor is this the usual work of travel. The events set down, varied as they are, appear all to have earned inclusion by the light which they may shed on the general mind of the Chinaman. We get the feeling, as we read, that Dr. Gervais was himself puzzled over and over again by the combinations displayed before him of subtlety and childishness, of close reasoning and easy opportunism, of coarseness and refinement—combinations indeed of most qualities which in modern Europe are held to be antitheses. He leaves China sadly, perhaps a little scared at the influence which Oriental philosophy may have obtained over him—at any rate such seems the impression of his colleague, Dr. Morel; but China has not said its last word for him. This is his own statement, and when he feels that he has more to tell he should have a thinking audience to listen.

Schistosomiasis

(*Bilharziasis*). By Dr. RAMESES GIRGES. London: John Bale, Sons and Danielsson. 1934. Pp. 529. 25*s*.

IT would be difficult to cite a parasitic disease with a more romantic history than the subject of the present monograph, which is of unusual medical and zoological interest. The time is moreover ripe for an authoritative review of bilharziasis, and the student of parasitology will certainly appreciate this thorough, competent, and aptly illustrated work. The 180 line drawings mostly executed by the author add materially to its value. The historical section has been well worked out and is illustrated with photographs of the pioneers in this field. (We note with regret the absence of Prof. R. T. Leiper from the gallery.) Every aspect of bilharziasis is thoroughly treated. The strictly zoological aspects in relation to the snail vectors of the disease are well described; the symptomatology is dealt with exhaustively; what is known of prophylaxis is well set out and the section on treatment is instructive and complete.

Endometriosis

Clinical Pathogenetic and Experimental Investigations. By HANS FREDRIK HARBITZ, University Institute of Pathology, Oslo, Norway. Oslo: Kirstes Boktrykkeri. 1934. Pp. 400. 10*s*. 6*d*.

Dr. Harbitz is over modest in disclaiming any intention to give a detailed presentation of the problem of endometriosis, for the subject is dealt with most thoroughly and clearly. The history of endometriosis is briefly reviewed and the present position of our knowledge is then set out: records of cases being used freely to suggest, illustrate, or prove any particular point. Minute consideration is given to the presence of the tumours in such situations as the groin, navel, laparotomy scars, and the perineum. A full description is given of the result of experimental transplantation of endometrium in rabbits. Seventy excellent photomicrographs and a huge bibliography complete a book which will be invaluable to all interested in the subject. It may be noted that the apparent increase in the frequency of occurrence of these tumours is the result of a more widespread recognition of their pathology.

THE LANCET

LONDON: SATURDAY, DECEMBER 22, 1934

THE STATUS OF THE OSTEOPATH

A DISCUSSION in the House of Lords last week preceding the second reading of the Registration and Regulation of Osteopaths Bill afforded opportunity for presenting the arguments for and against improving the status of the osteopathic practitioner. Several peers gave testimony to the benefit of osteopathy in their own experience. Lord GAINFORD said that on three occasions he had sprained his ankle and was treated by the medical profession, when it took about six weeks before his ankle was restored to full strength. On a fourth occasion a Swedish masseur cured the sprain within a week by manipulation. He regarded osteopathy as the best cure for nearly all the accidents at polo, cricket, or football. Lord ERNLE said that hunting people knew what benefits they had received from osteopathy, which they had failed to obtain in like measure, or with the same rapidity, from doctor or surgeon. Lord AMPTHILL said that the young fellow who put out his knee at football, if he went to a doctor would be told to lie up for three months and probably get a permanently stiff leg, if he went to an osteopath he would be playing again in a week; and Viscount ELIBANK, in introducing the Bill, spoke of the unfairness of stigmatising as quacks and charlatans men who performed services of this kind; for, he said, according to the existing medical laws, unregistered practitioners are all classed in the same category. In his appeal for official recognition of the osteopath Lord ELIBANK was not content with stating the case for the fair recognition of the man who delivered the goods; he distinguished rather carefully between osteopathic and medical practice. The ordinary medical man, he said, relies in the treatment of disease upon the giving of drugs or the surgical knife, whereas the osteopath relies upon the curative action of the body's own resources. There was here a fundamental difference in the view as to how disease originates; registration under the Medical Acts was not intended to be an obstacle in the way of developing medical science or to prevent the discovery and use of new methods or new principles in the treatment of disease. There was nothing in the Bill to enable an osteopath to obtain admission to the Medical Register. All that was desired was admission after specified qualification to a register of their own, allowing them to use such titles and descriptions as would identify them as osteopathic practitioners. Their claim to diagnose and treat disease was, he said, not now seriously contested in the United States of America or in Canada.

Two medical peers were willing to admit, indeed to recognise gladly, the value of manipulative treatment, of "the gift of hands" which can by training and education be brought to great dexterity and skill, but not the claim to found a new cult of medicine. The Bill, by the way, would give the osteopath power to sign certificates of birth and certify the cause of death (a proposal which "staggered" Lord HEWART). In firmly resisting this claim, Lord MOYNIHAN gave a thumbnail sketch of the development of medicine which was historically the parent and nurse of all sciences; for the method of inductive logic, the method of inquiry, comparison, generalisation, and the formation of conclusions was introduced by Hippocrates. This was the scientific basis of medicine to-day. Osteopathy, he said, had no connexion with the main stream of scientific medicine; medicine and osteopathy do not run on parallel lines—they are in direct and hostile opposition the one to the other. Manipulative methods were finding a place to-day in the curriculum of orthodox medicine, but he could find no room for special sanctions for any branch of medicine. The Bill embodied an endeavour to destroy the Hippocratic unity of medicine and to put in its place a theory of medicine that was the derision of all competent and experienced minds. Lord DAWSON also emphasised the complete liberty of thought within the medical profession. It was the first business in the training of medical students to see that they had trained minds; after passing their qualification they were free to take up osteopathy or any other line of practice. But he assured his compeers that osteopathy is itself not a science; it had indeed the support of no scientific man of any eminence, and to give an osteopath the status of a medical man without his basic training, without training in pathology, would be a public danger. Lord HORDER, who was not present, took another opportunity of publicly saying that it was difficult for him to understand how a single therapeutic measure like osteopathy could be erected into a system of medicine, for the most important thing in medicine was diagnosis. But, he added, if the public wanted to try out one particular method of therapeutics for all diseases he did not think that doctors ought to protest.

On behalf of the Ministry of Health, Viscount GAGE suggested that the Bill would to all intents be inviting the public to decide between two rival schools of medicine, for osteopathy was not a function, like dentistry, dealing with one part of the human body alone. Osteopathy was not in fact the only rival to medical science. Some present were prepared to testify to the extraordinary efficacy of mind healing. Why not set up yet a third school? There was, he reminded the House, nothing in the law to-day to prevent any person, whether registered or not, from practising osteopathy or any other system of healing he chooses. There are, said Lord GAGE, three courses open to osteopaths: (1) to convince the General Medical Council of the changes which they think necessary in the curriculum and then seek admission to the Medical

Register in the ordinary way; (2) to remain unregistered and convince the General Medical Council if possible that registered practitioners can properly be allowed to give anæsthetics for them. This, he said, would involve proof of a proper minimum standard of medical education and probably the compilation of a list of osteopaths recognised for the purpose by the General Medical Council; and (3) to adopt the position that the registered medical practitioner is the principal responsible for diagnosis and treatment, and the osteopath a technician possessed of special manipulative skill whose responsibility is confined to carrying out manipulative work under the direction of his principal. That, he said, was as far as the Ministry of Health could go.

THE EPILEPTIC PERSONALITY

THERE is general agreement that epileptics, as a class, are more egocentric and more sensitive than the rest of the community—that they are poor in ideas and unstable in their emotions. Thus they are said to possess the epileptic personality. But the place of the personality in the picture of the disease is less easy to define. One school of thought supposes that an inherited psychological constitution is the primary factor, and that the fits themselves are the outcome of the intolerable stresses which result from its contact with an unfriendly world. Another, and perhaps more widely accepted view, is that the traits which make up the epileptic personality develop because any child liable to fits is regarded as peculiar by those around him. The issue is not so simple as this. The relation of the peculiar temperament to the disease can perhaps only be studied satisfactorily in individual cases where its development can be watched over a number of years and can be carefully correlated with the type and incidence of fits and change of environment.

Intimate knowledge of home conditions and of the family history will be required to make such observations of much value, and in view of the need for appropriate data Dr. EDWARD BRIDGE[1] of Baltimore has compiled some detailed reports on a few children under his care. All who have to deal with epileptics, and who read Dr. BRIDGE'S interesting and careful compilation, will appreciate the clarity with which he presents his picture of the child's development under difficulties. But his conclusions are not so clear-cut. On the strength, indeed, of one remarkable case, he claims that the personality can be approximated to the normal by the provision of a proper environment (using that term in its widest sense), although the epilepsy is unaffected; and hence he argues that it is unlikely that abnormal personality can cause the disease. If this be accepted, defects in personality may, Dr. BRIDGE considers, be attributable to faulty environment, to anatomical cerebral defects such as scarring, tumour or developmental anomaly, or to some physiological disturbance which at the same time causes fits. The chance of removing them must depend on the relative importance of the contributory factors; faulty environment is capable of remedy but anatomical brain defect is not. The factor of physiological disturbance as a cause alike of attacks and of temperamental defects is certainly one that deserves more consideration. The irritability which often precedes a fit by hours or even days is explained by such a conception, and the great improvement in temperament which often follows a cessation of attacks may well be due to some undetermined physiological change which was also the cause of their stopping. In the same way a common antecedent disturbance may explain mental abnormalities following a series of fits, while the importance of physiological factors is emphasised by the conspicuous influence of recognised physiological disturbances, such as menstruation, on the course of epilepsy. The lesson of all this seems to be that difficulties of personality or even gross mental disturbance should not necessarily lead to a gloomy prognosis—at least until an attempt has been made to find the cause of the difficulties or disturbance. In some cases, clearly, the cause can be removed; though it must always be remembered that recurring convulsions may ultimately bring about gross changes in the structure of the brain.

[1] Arch. Neurol. and Psychiat., October, 1934, p. 723.

THE PLACE OF IRON IN HOOKWORM ANÆMIA

THE effects of hookworm infection on the blood of tropical races cannot be interpreted without knowledge of their normal blood standards. L. E. NAPIER[1] has reported that the blood of 43 apparently healthy Indian members of the staff of the Calcutta School of Tropical Medicine gave an average of 5,345,000 red cells per c.mm. and a hæmoglobin percentage of 105·9 (Hellige). These figures confirm the conclusion that low hæmoglobin values are not normal for dwellers in the tropics, and show that no anæmic hookworm case should be considered cured of the effects of infection until high hæmoglobin figures have been reached. The great and manifest value of iron in bettering the blood state of victims of this infection irrespective of whether the worms are left or removed has been amply confirmed in reports published this year from Egypt,[2] Porto Rico,[3] and Brazil.[4] Nevertheless, when worms have been left, normal hæmoglobin values have not been reached even by CRUZ, who after carrying on iron administration for six to twelve months reached an average hæmoglobin percentage of 81 only. In comparing the results of iron administration in those who have been de-wormed and in those who have not, it is unfortunately necessary to leave out of account the laborious Porto Rican hospital work, since the records presented[3] offer no evidence that the patients had been rid of their worms. Indeed the presumption is that they had not, for there is no mention

[1] Napier, L. E.: Ann. Rep. Calcutta School Trop. Med., for 1933, p. 87.
[2] Biggam, A. G., and Ghalioungui, P.: THE LANCET, 1934, ii., 299.
[3] Rhoads, C. P., Castle, W. B., Payne, G. C., and Lawson, H. A.: Medicine (Baltimore), 1934, xii., 317.
[4] Cruz, W. O.: Mem. Instit. Oswaldo Cruz, 1934, xxviii., 391; see THE LANCET, Nov. 17th, 1934, p. 1116.

of any fæcal examination made to determine this, the anthelmintic was hexyl resorcinol used in a defined manner, and the published reports of the writers who advocated its use in this particular way showed that nearly half the treated remained infected, even when the test was made by a technique which lacks ultimate delicacy and so increases the apparent numbers of cures. In animal experiments it has become at least usual to employ the most delicate available test when attempting to distinguish infected from non-infected; the distinction is not less important in observations on man. The presumption that most of these persons still harboured hookworms after anthelmintic treatment is strengthened by the likeness of their blood pictures to those reported by the late B. K. ASHFORD and his colleagues [5]; in all of them hookworms remained after repeated anthelmintic treatments, and in none of them did persistent treatment by iron succeed in raising the hæmoglobin percentage over 75. In the Egyptian work,[3] hexyl resorcinol having been tried and rejected as unsatisfactory, every patient was repeatedly treated with carbon tetrachloride, and intermediate fæcal examinations were made repeatedly to check the drug's effects, so that there is little doubt about the de-worming. In those rid of their worms the percentage rise in hæmoglobin was conspicuously higher than in those who remained infected, iron being administered to both series. And this clear pointer for treatment is made even more prominent in a later report by S. AZMY Bey,[6] who found that cessation of iron administration to persons still parasitised led to a return of their anæmia.

As to the state of the bone-marrow, both in Porto Rico [3] and in Brazil,[4] it has been confirmed that the essential feature is a normoblastic hyperplasia accompanied by a microcytic hypochromic anæmia. Though some aspects of the Porto Rican work add weight to the conclusion [7] that in practice anæmia is rarely due to a simple deficiency of a single factor, yet the condition just noted is in fact precisely that described by L. J. WITTS in his second Goulstonian lecture for 1933, as occurring when the bone-marrow obtains too little iron for adequate hæmopoiesis; this process is checked at the normoblastic level. Such deficiency can be brought about by chronic hæmorrhage, and the accumulating evidence, both experimental [8] and clinical,[2] that hookworms produce chronic hæmorrhage can no longer be brushed aside. The Egyptian report tells that occult fæcal blood was found in nearly all the cases examined. This has not always been so, and as we have noted [5] DE LANGEN estimates its usual reaction as equivalent to that produced by the swallowing of 2 to 3 c.cm. of blood. The efficacy of testing methods may explain some discrepancies; nor at present can the suggestion be finally excluded that—especially in cases of iron hunger—iron from the blood which is swallowed and voided by hookworms may be reabsorbed lower down the host's alimentary tract. Chronic hæmorrhage being then an established factor in hookworm infection, it follows that blood loss may so deplete iron reserves that adequate hæmopoiesis is impossible without extraneous iron in those considerable quantities which are necessary for the purpose.

There is an illuminating analogy between the hypochromic anæmia of hookworm infection and that of pregnancy. As to the latter, the fœtus depends absolutely on its mother for food and shelter; it is biologically speaking a parasite. Its demand for iron is great and this it filches from its mother and hoards; its own iron reserve in these anæmic cases is built up at the expense of its mother's; and while iron administration will relieve her anæmia, it will not cure it until she is rid of this drain. So may hookworms also at last exhaust the host's iron reserve by their blood-sucking, and so long as they continue to do so the blood, as the work quoted above indicates, will often fail to recover its normal quality. Again, the suggestion that iron is the best preventive of hookworm anæmia leaves out of all account the fact that the infected person is hygienically a great risk to himself and others. The matter of essential importance is then to rid the man of his worms. It may sometimes be necessary in his own interest to raise by iron administration the quality of his blood, and with it his general strength, before subjecting him to the strain of an anthelmintic, but that does not invalidate the conclusion that in his own interest and that of his fellows he must be rid of his worms at the earliest safe moment. It may be possible to keep up the water level in a leaky cistern by increasing the inflow, but in the long run it is cheaper, safer, and less exacting to stop the leaks.

[5] See THE LANCET, 1934, i., 759.
[6] Jour. Egypt. Med. Assoc., 1934, xvii., 739.
[7] THE LANCET, Dec. 8th, 1934, p. 1290.
[8] Ibid., 1932, i., 893.

A MEMORANDUM has been circulated by the medical secretary of the British Medical Association on the Registration and Regulation of Osteopaths Bill; the memorandum reaches us as we go to press. Dr. Anderson points out with excellent clearness that the effect of this Bill would be to set up two classes of practitioner under two different Acts, thus defeating the intention of the existing Medical Acts to draw a clear line between persons who have and persons who have not followed an authorised medical curriculum. He emphasises the freedom enjoyed by the medical practitioner of to-day to practise any form of treatment which he regards as beneficial, including osteopathy, but observes shrewdly that the Bill to which the House of Lords has decided to accord a second reading does not define osteopathy, suggesting rather that osteopathic treatment covers practically the whole field of medicine. "Medical education," Dr. Anderson concludes, "must rest upon a broad scientific foundation so that the student may be both competent in practice and trained to judge the value, or want of value, of future developments. Such a training cannot be provided in institutions restricted to a particular theory."

ANNOTATIONS

THEOBALD SMITH

TIME will come for a considered study of the life and work of Dr. Theobald Smith, who died at Princeton, New Jersey, last week, in his seventy-sixth year.[1] For 20 years he occupied the chair of comparative pathology at Harvard, and for another 15 years directed the department of animal pathology at the Rockefeller Institute. They were fruitful years and his output was immense. But at this moment it is only needful to recall an incident in the nineties of last century which is one of the romances of pathology. Paul de Kruif has told the story in his Microbe Hunters.

"Southern cattlemen bought northern cattle; they were unloaded from their box-cars and put to graze on the fields along with perfectly healthy southern cows; everything would go well for a month or so, and then, bang! an epidemic burst out among the northern cows. They stopped eating, they lost dozens of pounds in weight a day, their urine ran strangely red, they stood aimless with arched backs and sad eyes—and in a few days every one of the fine northern herd lay stiff-legged on the field. The same thing happened when southern steers and heifers were shipped north; they were put into northern fields, grazed there awhile, were driven away perhaps; when northern cows were turned into those fields where their southern sisters had been, in thirty days or so they began to die. . .

"What was this strange death, brought from the south by cattle never sick with it themselves, and left invisibly in ambush on the fields? Why did it take more than a month for those fields to become dangerous? Why were they only dangerous in the hot summer months?"

Commissioned by the Metropolitan Health Board to investigate, Theobald Smith and F. L. Kilborne discovered the cause of this Texas or red-water fever to be a protozoon inhabiting the red blood corpuscles, now known as *Babesia bigemina*; but they did not stop there, they went on to demonstrate that this parasite was transmitted by the tick *Margaropus annulatus*. Their experiments proved that cattle imported to infected areas did not fall victims to the disease if they were kept free from ticks. Furthermore, by placing the larvæ of ticks, hatched in the laboratory from eggs laid by ticks which had been removed from infected animals, on clean calves they showed that the infection taken up by one generation of tick passed through the eggs to the succeeding generation of tick. This was a complete piece of work. Had it been concerned with a disease of man instead of with one of cattle it would certainly have attracted as much attention as the subsequent discovery of the transmission of malaria by mosquitoes. From the zoological point of view the work of Smith and Kilborne was as important as, perhaps more important than, later discoveries of the insect transmission of disease-producing parasites. Texas fever is now under control and Theobald Smith must be ranked with Manson, Ross, and Bruce. So much for an almost forgotten story in microbiology. Theobald Smith's achievements in other spheres are better remembered. In 1904, independently of Richet and Arthus, he gave the original description of classical anaphylactic shock in guinea-pigs. In 1907 he proved that it was possible to immunise guinea-pigs actively by the injection of a balanced mixture of diphtheria toxin and antitoxin, and in 1909 he wrote "the method invites further tests as to its ultimate applicability to human beings." In 1922 he discovered that maternal bacterial antibodies were excreted in the colostrum of the milk of cows and that calves deprived of this invariably died of bacterial infections. As early as 1895 he described guinea-pig scurvy and in proving that it was produced by a diet deficient in green stuff carried out the earliest experimental work on avitaminosis. Other subjects he investigated were blackhead of turkeys, streptococcal sore-throat, and the differentiation of bovine and human tuberculosis. But, however important these later researches, Theobald Smith's claim to a niche in the temple of fame rests on being first to demonstrate the insect transmission of a protozoal parasite. It was in recognition of this that he was elected a foreign member of the Royal Society and awarded its Copley medal in 1932, in which year also the Royal Society of Tropical Medicine and Hygiene conferred on him the Manson medal.

[1] The portrait we reproduce is taken from Hervorragende Tropenärzte by Prof. G. Olpp (Munich: Otto Gmelin, 1933).

LONDON VOLUNTARY HOSPITALS

LAST week at a general meeting of King Edward's Hospital Fund for London, the Prince of Wales announced that for the third year in succession a sum of £300,000 was being distributed in aid of the voluntary hospitals in London, in addition to a sum of £20,000 in special grants towards the pensions scheme. It had, he said, been a great effort and he congratulated the donors on subscribing more than £2,000,000 a year in voluntary gifts and the patients on contributing last year £1,200,000 of which £365,000 (or precisely £1000 a day) came through the Hospital Saving Association. But in spite of the success of this great effort there was no place for slackening: the margin of income over expenditure was small and hospital expenditure was constantly increasing to keep pace with advances of medical science. Several hospitals in fact showed a deficit on the year's working. He expressed satisfaction that several more hospitals were refraining from waking their patients before six in the morning; only 15 per cent. now found it necessary to do so and it was hoped that their difficulties might soon be overcome. He spoke of the serious embarrassment to hospitals owing to the increasing number of accidents on the road which was not only a source of heavy expense but led to the diversion of beds from other purposes. There was general agreement that remedy was needed but not on the form of the remedy; at the moment the officers of the Fund were watching how the partial provision made by Parliament worked out in practice. In spite of special grants towards the provision of accident beds local cases of the kind for which the hospitals were intended were still being sent elsewhere. The best remedy, he added, would be a reduction in the number of accidents. More pay beds were being provided for middle-class patients and the Fund was making inquiry how best to give all hospitals the powers now possessed by many of them of providing paying beds for those who could not otherwise obtain the treatment they needed.

Time-saving methods in out-patient work were being studied and a memorandum was shortly to be issued with suggestions how to save the long waiting to obtain medicines; this memorandum would be circulated for discussion. Another method of relieving pressure on the out-patient department would be for district nurses to visit patients at home while still attending at hospital. As soon as funds were available it was proposed to make grants to hospitals to enable them to pay district nursing associations for cases of this kind. Finally the Prince referred to the many big schemes of hospital extension as a welcome sign of financial recovery.

MUSCULAR CONTRACTION

THE extent of shortening of muscle-fibre in muscles with different types of action has recently been investigated by Dr. R. Wheeler Haines, who has taken actual measurements on the cadaver. He finds that the shortening is 57 per cent. of the total natural length, a percentage a little greater than that usually accepted (50 per cent.): very possibly the difference corresponds to that between his "natural" position and the "mid-position" of older writers. Dr. Haines comments on the interesting fact that, in some muscles, contraction is ineffective before the full movement is attained, for example, in the long head of the femoral biceps. The subject in some of its aspects has arisen in anatomical circles during the last century or more: the late Prof. A. M. Paterson drew attention to it during the war, and Prof. D. Waterston has more recently brought it under the notice of the Anatomical Society. The questions have nothing to do with the force of the contraction, which depends on the cross-section of the muscle, nor with the actual effect of the contraction, which has to do with many merely physical matters of direction, leverage, and so on: they are only concerned with the extent of the actual contraction expressed in ratio. Good examples of what Dr. Haines terms "muscles of short action" may be seen not only in the biceps femoris but in the semimembranosus when the hip is extended, in the rectus femoris as an extensor of the knee when the hip is flexed, or in the calf muscles when full plantar flexion is combined with flexion at the knee. In the case of the biceps the extension of the hip leads to shortening of the long head of the muscle, so that the extra shortening involved in full flexion of the knee would be more than 57 per cent. of the length: thus the long head relaxes, but the short head is not affected by the hip movement, and carries on its contraction to full knee-flexion. Comparable adjustments exist for the rectus and gastrocnemius, but the semi-membranosus has no such help. The facts remain of little more than academical interest at present, but one can imagine conditions under which a philosophical surgeon might apply them in his clinical work.

URTICARIA

IT is often stated, but rarely demonstrated, that a focus of infection is the fons et origo of a remotely situated pathological process. Fink and Gay's[1] short review of 170 cases of urticaria and angioneurotic œdema seen at the Johns Hopkins Hospital is therefore especially interesting, for it contains a group of cases characterised by "the presence of some focus of infection, the removal of which resulted in the permanent disappearance of the urticaria within a reasonable period of time." The group contains 52 cases, almost all with infections of tonsils, sinuses, or teeth. The "removal" was surgically effected in only 35 of them, the rest being treated with vaccines, and cure lasting two years or more is claimed only in 74 per cent. Clearly then the group criterion just quoted has not been strictly adhered to, and this weakens the authors' argument. They give details, however, of two cases: in a patient of 36 an urticaria of six years' standing disappeared after removal of infected tonsils and two "abscessed" teeth, and in another, aged 23, removal of two dental abscesses was followed by the disappearance of an urticaria that had been recurring for a year; the patients were followed for four and two years respectively. It is unfortunate that more such examples were not given in detail. They may not amount to scientific proof of the focal infection thesis, but if they occur too often to be accidental they are sufficient evidence of its practical value.

Fink and Gay's second group includes patients sensitive to food substances, cosmetics, drugs, and the acarus of scabies. It is no new observation that an urticaria may be due to a coexistent scabies, but it is not so widely known as it should be, for the scabies is often missed and the only effective treatment for the urticaria consequently omitted. It is interesting that, in the diagnosis of this "allergic" group, Fink and Gay rely mainly on carefully taken histories and the trial application and withdrawal of suspected substances; "skin tests were chiefly of corroborative value." The remaining groups are psychogenic, endocrine, and "undetermined," but these are not necessarily watertight subdivisions. For example, the numbers of cases developing urticaria for the first time in each of the months of the year are indicated on a diagram, which shows a striking peak for January in every group except the small endocrine one. This suggests that the upper respiratory infections of midwinter are a contributing factor in bringing on urticarial attacks of varying ætiology. Nevertheless Fink and Gay conclude that the best hope of improved results in the treatment of urticaria lies in the careful clinical study of every case on the broad basis of some such grouping as they have adopted.

THE LUMINOUS WOMAN OF PIRANO

CERTAIN animals and plants are well known to give off phosphorescent light, and from time to time luminous human beings have been reported. Generally, but not always, this emission of light has been noticed just before death. Little is known of the cause of this luminosity, and curiosity has been quickened by Anna Monaro, the Luminous Woman of Pirano, of whom Dr. G. Protti, of Venice, has recently published an account.[1] Dr. Protti first collected the evidence of eye-witnesses. He found that the light had not been seen before the end of February. The usual time of its appearance was during the early part of the night, never in the daytime, or when Monaro was only lightly asleep; it lasted never longer than three to four seconds, it always appeared in the region of the heart, it varied in colour from green to red. Monaro herself was unaware of the light and it left no trace of odour, heat, or colour. It had no connexion with menstruation, and no medicine or photodynamic substance was taken. Dr. Protti next made his own examination and found Monaro normal in every way, except that she suffers from asthma and has slightly raised blood pressure. An electrocardiogram was normal. Inquiry into her life-history showed that she had spent an

[1] Fink, A. I., and Gay, L. N.: Bull. Johns Hopkins Hosp., 1934, lv., 280.

[1] Riforma Medica, 1934, l., 841.

unhappy childhood, married young, and borne 12 children, with four abortions. In 1912 she was seriously ill with broncho-pneumonia and pleurisy. She lives almost in indigence, but such food as she eats is in no way out of the ordinary. During Lent she fasts strictly, eating only soup and milk, and at this time the phenomenon manifests itself most frequently, particularly during Holy Week when the fast is almost absolute. In one night the light appeared 25 times. Convinced that the appearance of the light was not the result of collective hallucination, Dr. Protti installed a powerful cinematograph with a supersensitive film on which an automatic registration of the duration of the light could be made. Above the region of the heart he suspended a photo-electric cell connected with a sensitive galvanometer, and in order to eliminate all possibility of electricity being used he arranged an electroscope enabling him to examine the state of the electric charge of the air round the patient. The bed was insulated from the floor. With the room in complete darkness a light was seen after a time to emerge from the bedclothes and Dr. Protti immediately started the cinematograph at 16 photograms per second. The light lasted $3^{3}/_{16}$ seconds and gradually faded away. It illuminated the jaw and cheek bones, but caused little shadow contrast. It arose from the region of the heart from an area the size of an adult's open hand, and was sufficiently strong to make the adjacent beds visible. No current was registered on the galvanometer, and when the observation was controlled there was no appreciable change on the electroscope. However, a definite shadow appeared on the cinema film. Monaro, whose sleep is usually broken and disturbed, woke with a start. At the time the light appears the heart accelerates to about double the usual rate. An estimation of the radiating property of the patient's blood showed this to be three times that of normal blood, and it is considered that this is significant in connexion with the origin of the light. This property is said to vary with the basal metabolic rate; clinically there was no evidence of toxic goitre, but no metabolism estimation was made. Having, as he believes, excluded trickery and the taking of phosphorus Dr. Protti suggests that the religious complex which dominates the patient disturbs the endocrines, upsets the vago-sympathetic balance, and induces certain salts of the blood, notably sulphur compounds, to become phosphorescent. Such a change, he thinks, is facilitated by the fasting state. More recently Dr. G. W. Crile is reported to have demonstrated at Cleveland the emission of both visible and infra-red waves from the brains of dogs, the radiation being increased by thyroxine and adrenaline and decreased by anæsthetics. Alcohol first increased and then diminished the radiation.

CHARING CROSS HOSPITAL MEDICAL SCHOOL

PUBLIC appeal was launched at the beginning of November for assistance to the medical school of Charing Cross Hospital, the occasion being the centenary of the school which was founded in 1834 by Dr. Benjamin Golding. The appeal was made by Air Vice-Marshall C. A. H. Longcroft, and Major Colin Cooper, who presided over the preliminary meeting, opened the subscription list with a gift of £1000 "in memory of all those members of the Royal Flying Corps who fell in the war." Dr. Golding who founded the school was a far-sighted man. He saw the lack of hospital relief in the densely populated district where he lived, and he opened his house in St. Martin's-lane for the reception of patients and speedily found that the accommodation was outrun. The possibility of founding a charity then suggested itself and a general infirmary and dispensary with 12 to 15 beds was started in Villiers-street while support of the proper establishment of the hospital was invited and secured. In 1831 the foundation-stone of the present Charing Cross Hospital was laid and the hospital, with a medical school within its buildings, was opened on Oct. 1st, 1834. The original design of the institution was the foundation of a charity and a medical school as integral parts "where practical information may be conjoined with scientific instruction." The story of the development of Charing Cross Hospital from then up till now is well told in the brochure justifying the appeal. This, incidentally, is the only public appeal which the school has ever made, but we may recommend to our readers the account of the hospital and school written some 20 years ago by Dr. William Hunter, on which the historical information is based.

The present school buildings were erected in 1881. Since then many additions and alterations have been effected in order that their efficiency should be maintained. Further work of this nature is now necessary. In particular, extended laboratory accommodation for the teaching of pathology, bacteriology, and public health is essential. One of the lecture theatres requires to be modernised by the provision of new seating and appointments. By reason of its age, the central heating system, which has been installed for many years, no longer functions with economy and satisfaction and must consequently be entirely renewed. Accommodation for research is at present scanty and needs urgently to be extended, and other structural alterations are also immediately desirable. If, as is hoped, it is possible to establish a students' hostel, certain of the accommodation in the basement of the school would be released and would be utilised for the provision of a squash rackets court for the Students' Union. Such a means of providing recreation and exercise for the students during their moments of leisure is to highly commended.

Donations may be sent to the secretary, Charing Cross Hospital Medical School, 62–65, Chandos-street, London, W.C.2, or to the school bankers, Messrs. Coutts and Co., 440, Strand, W.C.2, for the credit of "Charing Cross School Appeal" account. They may be specifically allocated to any of the objects of the appeal, or may be left for allocation as the school committee of management may think most desirable.

ANOTHER ANALGESIC FOR CHILDBIRTH

MANY barbiturate compounds have been tried as analgesics in childbirth. None has hitherto been free from disadvantages which, on the whole, more than counterbalanced the advantages provided. Now, however, the claim is made [1] by Dr. Emmet H. Rund, of St. Louis, Mo., for allobarbitone B.P.C. (diallyl barbituric acid) that it alleviates pain, relaxes cervix and perineum, does not retard labour, and does not depress the respiration of the new-born infant. Allobarbitone is nearly insoluble in water, but combined with four parts of urethane it goes readily into the 10 per cent. solution known in this country as Dial ampoules Ciba. This solution was given by intramuscular or intravenous injections of 2 c.cm. Usually one such injection is given when labour is well established, and a second one about half an hour before the expected end of the second

[1] Amer. Jour. Surg., November, 1934, p. 288.

stage; the first has usually been intramuscular, the second into a vein. The intravenous injection acts more quickly than the other. Dr. Rund reports on 115 consecutive patients with no deleterious effect upon the baby and no complication in the mother except for transient diplopia in two cases. The warning is however given that administration of large doses of the solution before pains are well established appears to retard labour. A shorter series of similarly successful cases has been reported [2] by Dr. Porter Brown, of Salina, Kansas. One great advantage over other barbituric analgesics is that the dial urethane solution does not produce excitement, but acts as a sedative. The patient rests or sleeps between pains. Dr. Rund thinks that the urethane may assist the sedative action of the dial as well as making it soluble.

BROADCASTING AND THE G.M.C.

THE General Medical Council would seem to give little direct guidance on conduct to medical practitioners other than through their interpretation of the warning notices printed in the Medical Register. A discussion in camera at the last executive committee was followed by a debate in camera at the Council meeting when it was resolved to inform the British Broadcasting Corporation that the G.M.C. could take no responsibility for the B.B.C.'s policy as to broadcasting on medical or public health subjects, or as to broadcasting by registered medical practitioners. The resolution went on to assert the G.M.C.'s opinion that it is desirable in the public interest for registered medical practitioners to broadcast anonymously. It seems that the director-general of the B.B.C. had in a letter last June submitted various suggestions for the approval of the G.M.C. Of these suggestions the G.M.C. has approved the following: (1) that correspondence addressed to broadcasters who are medical practitioners should not be forwarded to them, and that the anonymity of speakers should be strictly observed in connexion with any inquiries relevant to them or to their broadcast talks; (2) that the G.M.C. should be furnished after the event with the names of the practitioners concerned and with the text of the matter in question. After making these recommendations the Council decided to rescind its resolution of 1932 in which it was stated that "when in the interest of the education or information of the public, it is desirable or necessary that subject matter concerning medicine or public health should be broadcasted, the procedure is that the person broadcasting and the remarks to be broadcasted should be approved by a registered medical practitioner nominated for this purpose by one of the following bodies"—viz., in England the Ministry of Health, in Scotland the Department of Health, in Northern Ireland the Local Government Department Ministry of Home Affairs, in the Irish Free State the Local Government Board. At that time the registrar of the G.M.C. was empowered to reply in that sense to inquiries on the subject. To outward appearance at any rate the existing arrangement has been working well, for no charge in connexion with broadcasting has reached the stage of public inquiry by the G.M.C. And it is just over seven years (Oct. 5th, 1927) since a medical officer of health first broadcasted (in his own name) in this country. The practitioner will now have to decide without specific help from the G.M.C. whether if he engages in broadcasting his action can be construed as "advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting his own professional advantage." An interesting sidelight on the relation of medicine to broadcasting is thrown by a controversy which has arisen in the United States of America where the National Advisory Council has initiated a series of broadcasts under the title "Doctors, Dollars, and Disease." The *Journal* of the American Medical Association complains that this Council is overwhelmingly controlled by those who believe in State medical service and the socialisation of medicine and that it contains no definite representative of the 100,000 physicians who form the Association. The *Journal* regards the broadcasting programme as an attempt on the part of the committee on the costs of medical care to further its propaganda and reproaches the National Council with undermining the medical profession of America.

DISRUPTION OF THE ABDOMINAL INCISION

THE practice of the Joseph Price Hospital in Philadelphia, as described by J. W. Kennedy,[1] has been to dispense with absorbable suture material and to sew up all abdominal wounds with through-and-through stitches of silkworm gut. This practice is based on several strong objections to the methods used by the great majority of surgeons. Kennedy indicts these methods as "complicated technique," "traumatic in every step," and an "abuse of delicate tissues." In the first place he holds that most of the wounds he sees are too long by a third to a half; secondly he objects to traction and transfixation of the wound edges by metal instruments. Continuous stitching with catgut is condemned on the grounds that it strangulates the tissues; that catgut so quickly loses its tensile strength as to be useless in resisting disruption of the wound edges; and that it acts for the whole time, before its complete absorption, as a foreign body, causing exudation and œdema of the wound, and predisposing to sepsis. The result of suture of the wound in layers with use of catgut is said to be a much increased liability to complete and partial disruption (with possible protrusion of viscera) and to seriously infected wounds. Both dangers Kennedy claims are obviated by use of his technique. His sutures are inserted three to the inch. They include in their bite every layer of the divided abdominal wall and are tied without much traction; they are removed on the ninth or tenth day. During insertion of the stitches, the skin and peritoneum are pushed back by the thumb and middle finger so as to allow the muscle and fascia to bulge forward between them. This ensures that the needle in its passage through the tissues shall get a firm grip of the muscle and fascial layers. A straight needle is used and care is taken, as it passes from skin to fascia or from fascia to skin, to press back the fat so that it shall not protrude between the stitches. In wounds requiring drainage the use of interrupted stitches, allowing each suture to look after itself, and the absence of any buried material are said to be of great advantage.

Complete disruption of the abdominal wound has a high mortality, and Kennedy quotes the figures 30 to 47 per cent. from different clinics in America. No deaths traceable to either cause have occurred, however, at the Joseph Price Hospital in the combined experience of himself and of Dr. Joseph Price, together covering 56 years of surgical practice. Neither of them has ever had experience of a wound bursting open with protrusion of viscera.

[2] THE LANCET, Nov. 10th, p. 1060.

[1] Amer. Jour. Surg., September, 1934, p. 512.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXXII.—PROGNOSIS OF FEMORAL HERNIA

THE ætiology of femoral hernia has been frequently investigated and discussed, and there are several theories of its causation still current. The belief, however, that it is usually an acquired condition is commonly held, and this receives strong confirmation from the fact that it is seldom seen in infants and small children and is rare in the second decade of life. It is a disability of adults only and grows commoner as life advances, being more frequent in women than in men, and among women more frequent in those that have borne children.

Consideration of the ætiology of femoral hernia is not a purely academic matter, being intimately concerned with the anatomy of the parts and so with treatment and prognosis.

The main anatomical facts concerning a femoral hernia are that the sac first descends vertically downwards through the crural canal with the compressible femoral vein on its outer side and the sharp edge of the lacunar (Gimbernat's) ligament on the mesial side. The sac then turns forwards through the saphenous opening, so that the fundus lies in the inner part of Scarpa's triangle, below and to the outer side of the pubic spine. Usually the neck of the sac is narrower than the fundus, though nearly always the fundus is actually smaller than it seems to be on clinical examination, since it is usually embedded in a considerable lump of properitoneal fat. It is frequently this lump of fat which renders the hernia apparently irreducible. The sac is often, in fact, of very small capacity, and its presence may be quite unknown until suddenly it becomes filled with an extrusion of abdominal contents.

As in inguinal hernia, it is usually the neck of the femoral sac which is its least extensible portion, and this, coupled with the rigidity of the lacunar ligament, renders the liability to strangulation of the hernia particularly great. It is, in fact, stated that strangulation is 8 to 10 times commoner in femoral than in inguinal hernias. The prognosis of untreated femoral hernia is at once seen, therefore, to be bad, relatively to that of inguinal hernia, since a greater liability to strangulation must carry with it a greater morbidity. There are other features which render strangulation of a femoral hernia particularly dangerous. First, the hernia may develop very insidiously, so that its existence is unknown until strangulation takes place. Secondly, the hernia is often so small that it may be entirely overlooked as a possible cause of obstructive symptoms. Only careful examination of every hernial orifice whenever obstructive symptoms arise can ensure that this serious mistake shall not be made. Thirdly, the small size of the sac and its position gives rise in a considerable proportion of cases to the condition known as "Richter's hernia," in which only a part of the circumference of the gut is strangulated. Obstruction is therefore for some time incomplete, and the symptoms correspondingly inconclusive, so that operation may be delayed longer than it should be. Fourthly, the anatomical peculiarities of the crural canal, in that it has a soft structure on the outer side and the tense, sharp edge of the lacunar ligament on the mesial side, produce unequal pressure on the walls of the strangulated gut. The result is a rapid necrosis of the small portion of the wall of the gut in contact with the edge of the lacunar ligament and the consequent development of a potential perforation, through which can occur a gush of intestinal contents immediately the gut is disturbed by unwise taxis or by inept operation. If this catastrophe should happen the patient will almost certainly die of acute peritonitis, and safety therefore depends in a high degree on the skill and knowledge of the surgeon.

Another factor contributing to the seriousness of the prognosis is the advanced age and the debility of many of the patients, so that general anæsthesia and surgical shock are to be avoided if possible.

The patient's safety in strangulated femoral hernia will therefore depend on (1) early diagnosis; (2) the use of local analgesia, which should in my opinion *always* be used in dealing with strangulated hernia; (3) the avoidance of all unnecessary trauma—local analgesia is an important aid in attaining this end, since it eliminates the necessity for undue hurry or violence; (4) the routine performance of the "high" or "inguinal" operation, the peritoneal cavity being opened via the inguinal canal so that the gut entering and leaving the hernial orifice can be identified and controlled before the sac has been touched. This manœuvre ensures that the catastrophe due to a perforation (referred to above) shall not occur, and facilitates reduction of the strangulated gut. The opening in the peritoneum also makes easy an immediate resection of the damaged portion of the gut when this is necessary.

The seriousness of the prognosis of strangulated femoral hernia, and therefore of all untreated femoral hernias, is illustrated by the following figures taken from the statistical tables published by St. Bartholomew's Hospital over a period of 10 years.

Strangulated Femoral Hernia, 1919–28

Admitted ..	171	(male 38, female 133)
Died	25	(,, 6, ,, 19)

Percentage mortality 14·6.

During the same period only 138 strangulated inguinal hernias were admitted, although inguinal hernia is so very much more common than femoral. The percentage mortality was approximately the same.

RESULTS OF TREATMENT

The prognosis in femoral hernia depends also upon the results of treatment. The hernia can sometimes be successfully treated by the use of a properly made and properly fitting truss. But the anatomical features prevent any truss from being quite efficient, since the portion of the hernia in the crural canal cannot be controlled by the pressure of a pad on the skin. The fundus may be kept empty, but abdominal contents can still descend into the neck of the sac. All patients with femoral hernia should therefore be urged to undergo operation rather than risk treatment, only partially efficient, with a truss. There are practically no contra-indications to the performance of a properly designed operation under local analgesia.

PROSPECTS OF CURE

Consideration of the prognosis in femoral hernia must include the results of operation and the prospects of cure. It is difficult to obtain statistical evidence which can be relied upon, since few surgeons have made a practice of following-up their patients after operations for this condition, but such statistics as are available indicate a recurrence-rate of at least 5–10 per cent. Formerly the operation was per-

formed through a vertical incision in Scarpa's triangle, the sac being cut off just below the inguinal ligament and the opening of the crural canal closed by a suture. This incision left a very ugly scar in the groin, and was theoretically unsatisfactory, since the whole of the neck of the sac could not be removed by this route. During the last ten years this low operation has been largely replaced by the inguinal operation, which enables the surgeon to remove the whole of the sac flush with the general peritoneal cavity. The majority of patients were undoubtedly cured even by the low operation, but that a considerable number of recurrences took place is demonstrated by my experience during ten years at the City of London Truss Society, where I saw many patients with recurrences after operation for femoral hernia. Most of these had been subjected to the low operation. The high operation seems to be followed by fewer recurrences, though the technique employed is somewhat more difficult. Usually the opening is closed by suturing the lower edge of the internal oblique muscle to the ligament of Astley Cooper. I have found useful a modification of this method which consists in turning down a flap of aponeurosis from the internal oblique layer of the anterior rectus sheath, which is sutured to the ligament of Astley Cooper. The tissues concerned are then not under any tension, and permanent cure is more likely to result, especially when the opening of the crural ring is rather large.

The operative risk in dealing with femoral hernia is negligible in competent hands. The high operation, however, demands, as already stated, somewhat greater technical skill than the older operation. There is a greater risk of injury to the femoral vein, resulting in hæmorrhage or thrombosis, and when the hernial sac is being removed flush with the peritoneal cavity it must always be remembered that a corner of the bladder may be adherent to the mesial side of the neck of the sac. All tissue must therefore be carefully stripped off it, since, if the bladder be included in the ligature, the consequences may be most serious, and the patient may, indeed, lose her life.

Among the patients seen at the City of London Truss Society it was noticeable that many of those with recurrent hernia had been operated on for strangulation. It is clear, in fact, that recurrence after the relief of a strangulated hernia is very frequent, and this is to be attributed to the prevalent practice of cutting the lacunar ligament before reducing the hernia. This procedure is, however, quite unnecessary and is to be deprecated. If the high operation advocated above is being performed, the strangulation can be relieved and the hernia reduced after a small nick has been made in the anterior wall of the crural canal. This divides only fibrous tissue in the neck of the sac and does no material damage. If the operation is being performed under local analgesia the usual steps for the cure of the hernia can be carefully carried out exactly as when the strangulation is not present.

It is very unusual for a femoral hernia to attain the large dimensions often seen in inguinal hernia. When this does occur, strangulation is unlikely to follow, so that the danger to life is small. It may, however, cause great inconvenience and disability. It can be successfully cured by means of a fascial graft from the fascia lata of the thigh after the method of Gallie.

GEOFFREY KEYNES, M.A., M.D., F.R.C.S.,
Assistant Surgeon, St. Bartholomew's Hospital; Consulting Surgeon, City of London Truss Society.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdr. P. J. A. The O'Rourke is promoted to rank of Surg. Comdr.

Surg. Lt.-Comdr. J. C. Gent to *St. Angelo* for Malta Hospital.

Surg. Lt.-Comdr. (D.) A. T. Dally to *Drake* for Plymouth Hospital.

Surg. Lts. W. W. Simkins to *Courageous*; J. G. M. Nisbett to *Victory* for R.N.B.; E. B. Bradbury to *Barham*; and J. E. Davenport to *Falmouth*.

ROYAL NAVAL VOLUNTEER RESERVE

Proby. Surg. Lt. P. G. Burgess to *Renown*.

ROYAL ARMY MEDICAL CORPS

Lt.-Col. A. G. Biggam, O.B.E., M.D., F.R.C.P., R.A.M.C., to be Asst. Professor of Tropical Medicine, Royal Army Medical College.

Lt.-Col. J. J. O'Keeffe, M.C., M.B., having attained the age for retirement, is placed on retd. pay.

Maj. A. F. C. Martyn to be Lt.-Col.

REGULAR ARMY RESERVE OF OFFICERS

Capt. F. W. Oldershaw, from Supp. Res. of Off., to be Capt.

TERRITORIAL ARMY

Capt. D. C. McC. Ettles, M.B., R.A.M.C., to be Divl. Adjt., 56th (1st Lond.) Div., vice Maj. H. G. Peake, M.B., R.A.M.C., vacated.

Lts. W. C. Jack, J. Peter, A. T. Fripp, and H. Temkin to be Capts.

Capt. T. Wallace resigns his commn.

MEDICINE AND THE LAW

Evidence of Blood Tests in Paternity Dispute

A MESSAGE from its Berlin correspondent, published in the *Times* of Dec. 3rd, recorded a fresh instance of the use of scientific evidence of blood groups in criminal cases. It stated that in the past few days two German courts, one at Stuttgart and the other at Meiningen, had sentenced a woman defendant to a term of imprisonment for perjury in alleging that a particular man was the father of her child. The falsehood was disproved by blood tests which showed that the alleged paternity was impossible. The new edition of Taylor's "Medical Jurisprudence," reviewed in another column, explains that medical evidence can prove a negative in such cases. If more frequent recourse has been had to this kind of proof in continental courts than in our own, the fact is not due to want of authoritative testimony but to the inability of our magistrates and judges to compel the parties to submit to a blood test. An English court has been asked to order such an examination but has refused on the ground that it has no power to do so. Thus it is left for the legal advisers to persuade, or for cross-examining advocates to provoke, the parties to undergo a voluntary test. A like difficulty diminishes the value of the suggestion, made not long ago, that a blood test would conclusively determine whether or not a motorist had recently taken alcohol. The motorist can volunteer to undergo the test, for what it may be worth; he cannot be compelled. It is possible that foreign police authorities and courts have more peremptory powers.

SPECIAL ARTICLES

THE USE OF CONVALESCENT MEASLES SERUM IN SCHOOL EPIDEMICS

By F. G. Hobson, D.S.O., D.M. Oxon., F.R.C.P. Lond.
HONORARY PHYSICIAN TO THE RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD

Familiarity with measles can never breed contempt, and increasing experience leads us to regard it with respect and even some anxiety. The disease recurs periodically in epidemic form and in its presence the problems connected with its management, mitigation, and treatment range from those which face the general practitioner in attendance upon individuals or family groups to those of the medical officer of health in charge of a city or district. In the present communication the problems which face the school medical officer are considered and observations are made upon three epidemics in boarding-schools which are, from the epidemiological standpoint, semi-isolated communities.

A plea is justified for greater uniformity as regards the elementary data in text-books, fever manuals, &c., which at present show considerable and important differences in connexion with this common disease, and do not always clearly state whether the appearances of prodromal symptoms or of the rash is to be looked on as the diagnostic date. Such differences lead to difficulty and confusion in view of the increasing practice of prevention and attenuation by the use of convalescent or adult serum.

Communicability.—It is generally held that in a typical case the disease is communicable during the prodromal catarrhal stage which lasts 4–5 days and until the cessation of abnormal mucous secretions. This statement is common to most text-books and schedules, and attention is drawn to it for two reasons only :—

(1) Twice I have had cases of measles isolated from contacts on a morning temperature of 99° F. five days before the earliest appearance of a rash, only to find that the infection had been spread to the contacts. Therefore it is wiser to consider that the infection *can be* transmitted at least *six days* prior to the rash and in the entire absence of any obvious catarrhal symptoms or Koplik's spots.

(2) The early infectivity has a bearing upon the question of immunisation by serum which is referred to later.

The *incubation period* is usually stated to be 7–14 days, but I doubt whether I have seen any incubation as short as 7 days, and most definitely this period can be prolonged beyond 14 days—particularly, as I shall show later, if the prodromal stage is modified by convalescent serum. The exact length of the incubation must usually be a matter of speculation since the day of exposure is so often obscure.

Quarantine.—The usual period of quarantine (as an example, the Medical Officers of Schools "Code of Rules") is 16 days, and this I regard as a dangerously low and inadequate figure. The quarantine should be 21 days. The quarantine period should cover such a period of segregation from the date of exposure as will give time for the detection of the disease in the segregated person. On several occasions I have known the first prodromal rise of temperature occur on the 15th day after exposure, no rash being evident until five days later. The prodromal stage may be almost entirely absent, especially when serum has been given.

To sum up these observations, my view is that :—

(1) The infective stage of measles should be considered as commencing at least *six days* before the rash, and may be entirely unaccompanied by any detectable coryza, Koplik's spots or diagnostic feature, other than a rise of temperature.

(2) The incubation period of 14 days is too short, particularly if serum has been injected.

(3) The quarantine period should certainly be 21 days since prodromal symptoms may be negligible, and in any case may not be evident until 15 days after exposure, the rash not appearing until the 20th day or even the 21st day; this is particularly true if serum has been injected.

Epidemic aspects.—Recent studies of the epidemiology have brought to light certain facts of which the general public have little or no knowledge and with which we as a profession are but insecurely conversant. Particularly in relation to the spread of measles in a closed or semi-closed community such as a school is it important to recognise that even among the susceptibles some 30 per cent. or more may escape infection. This immunity or failure to be affected by the disease is natural or acquired by contact and is temporary. The importance of this fact is well brought out by illustrations later in this paper.

The appearance of measles in a school initiates a period of considerable anxiety for the medical officer in charge, with the foreknowledge that pulmonary or otological complications will probably develop in a small proportion of cases. These anxieties will be accentuated in relation to any known "delicate" susceptibles and in relation to all susceptibles should there be any coincident infection such as whooping-cough or a nasopharyngeal streptococcal infection in the school—to name only two infections common to school life.

Prevention of complications by means of convalescent or adult serum was considered to have played some part in the London measles epidemic 1931–32. It is pertinent, therefore, to consider to what extent and in what circumstances the use of serum is practicable, justifiable, and profitable in such epidemics in boarding-schools.

Emphasis is here laid upon the obvious impracticability of attempting mass prophylaxis or attenuation in a mixed school for day and boarding pupils in which, in the presence of an epidemic, any isolation or accurate control of the movements of the pupils is impossible. While it may well be advisable to arrange for the "protection" by serum and subsequent isolation of delicate individuals, any attempt at mass prophylaxis or attenuation is foredoomed to failure in any such "mixed school."

The recommendations of those with greatest authority in this sphere of medicine may be briefly summarised as follows. Complete protection should be given: (1) to all patients who are weakly or debilitated; (2) to those suffering from any serious intercurrent disease, infectious or otherwise; and (3) to all children under three years of age whatever their condition of health. In connexion with school work condition three is inapplicable.

Attenuation.—After the age of three, the physical state being satisfactory, it is desirable to aim at a modified attack should circumstances permit, since this is stated to confer a permanent immunity. There is the further alternative, possibly the only one in certain circumstances, of permitting the epidemic to take its course when suitable medical and nursing accommodation is available. Considerations which add difficulty to the decision as to the

course to follow in a boarding-school are the following :—

(1) A school is a relatively large unit, segregation of the members of which can never be exact.

(2) The immunity given by serum lasts only a few weeks, whereas the susceptibles remain together for approximately twelve weeks, and each generation of infection re-exposes the susceptibles on a falling tide of immunity.

(3) The consent of all parents may not be obtainable, and the presence of "unprotected" individuals among susceptibles whose "protection" is of limited duration may frustrate any prospects of success.

The above factors are common to any boarding-school, and on theoretical grounds any attempt at mass prophylaxis might reasonably be condemned out of hand. It is therefore of some interest to see how such an attempt did in fact work out. Three epidemics in two different schools are considered in relevant detail, and offer contrasts in the use of convalescent serum and suggestive evidence as to the reduction of complications and the importance of the development of latent immunity in epidemic measles in such communities.

Convalescent Serum in Three Epidemics

Fig. 1 illustrates the 1929 epidemic in School A. The number in the school was 56; 20 had already had measles so the number of susceptibles was 36. The results are seen in Table I.

TABLE I.—*School A* (1929). *Thirty-six Susceptibles*

	No.	Measles.	Escaped.
Unprotected	36	36	0
Protected	0	0	0
Total	36	36	0

100 per cent. infected; 0 per cent. escaped; 6 complications (otitis media, 3 cases; broncho-pneumonia and otitis media, 3 cases).

The high incidence of complications (16·6 per cent.) was attributed to overcrowding and inadequate spacing of beds with consequent cross-infection. The infection from the cook was introduced into the school as the result of an illegal visit of two boys to the kitchen.

Fig. 2 shows epidemics in School B in 1930 and 1934. In 1930 there were 121 children in the school, of whom 53 had already had measles. The numbers affected are seen in Table II. In 1934 there were 99 in the school, of whom 48 had had the disease. Table III. shows the incidence.

TABLE II.—*School B* (1930). *Sixty-eight Susceptibles*

	No.	Measles.	Escaped.
Unprotected	65	46	19
Protected	3	2	1
Total	68	48	20

70 per cent. infected; 30 per cent. escaped; 1 complication; 2 protected children who developed measles had modified attacks.

TABLE III.—*School B* (1934). *Fifty-one Susceptibles*

	No.	Measles.	Escaped.
Unprotected	2	0	2
Protected	49	10	39
Total	51	11*	41

20 per cent. infected; 80 per cent. escaped; 0 complications; 10 protected children developed measles and 6 of them had modified attacks.

* One boy stated to have had measles and therefore not protected by serum developed measles, possibly a second attack.

In Figs. 1 and 2 the date of admission to the sanatorium is the date recorded; in most instances this date represents the detection of prodromal symptoms—pyrexia, catarrh, Koplik's spots, &c., and to this extent anticipates the date of appearance of the rash.

DISCUSSION

While the danger of drawing conclusions from a few observations is fully appreciated, it is fair to assume that limited data collected under careful supervision may be of greater value than more extensive data less carefully supervised; and while the number of variable factors to be considered in any epidemic must be great, in the three epidemics illustrated emphasis may fairly be laid upon the factors common to these epidemics. (1) The diagnosis, treatment, and management were in the hands of the same medical man. (2) The nursing staff was adequate and competent and every facility was available. (3) The epidemics occurred in boys' boarding-schools under conditions which permitted only minimal contact with the outer world. (4) The boys were drawn from the professional classes and may be regarded as a good sample of such a population. (5) The three epidemics occurred in the months of May, June, and July, a season not commonly associated with nasopharyngeal and respiratory infections, and no such infection was obviously present prior to the appearance of measles.

TABLE IV.—*Serum Administration*

Date.	Inoculated.	Days after exposure.	No.	Source	Measles.	Escape.
May 12th	43	5th–8th day	32	O_1	7	25
			8	L	0	8
			3	W	0	3
May 14th	1	7th–10th day	1	S	0	1
May 15th	3	8th–11th day	1	W	1	0
			2	S	2	0
May 29th	2*	1st–8th day after 1st generation.	2	O_2	0	2
Total ..	49				10	39

O_1 = Serum from adult one month convalescent from measles.
O_2 = Serum from adult one week convalescent from measles.
L = Serum from Dr. Nabarro (London).
W = Serum from Dr. Dyke (Wolverhampton).
S = Whole blood (10·0 c.cm.) taken four days after defervescence of temperature from initial case.
The variation in date of inoculation of susceptibles was due to delay in obtaining parents' consent, &c.
*1 boy of the three not originally inoculated. 1 boy returned late to school.

TABLE V.—*Course of Epidemic*

Date.	Cases.	Total.	Generation.	Comments.
May 7th ..	1	..	..	Initial case.
May 20th .	1	..	..	Normal course. Prodrome 5 days.
May 27th .	1	3	1st	Explosive development of rash. No prodrome.
May 28th .	1			Normal course.
June 9th .	1*	3	2nd	Normal course.
June 12th	2			Attenuated attacks.
June 25th	1	2	3rd	Attenuated attacks.
June 28th	1			
July 9th ..	2	2	4th	Normal course.

* Stated to have had measles and not therefore protected by serum, possibly therefore a second attack.

School A (1929).—This epidemic ran its course and all susceptibles were attacked, the two generations being fairly well marked. The complications were disappointingly high and severe (16·6 per cent.) and in discussion later with Dr. Alison Glover of the Board of Education, the suggestion was made that the distance between beds had been inadequate and that in consequence cross-infection of nasopharyngeal flora had occurred. In the disorganisation inevitable in a school epidemic, there is liable to be overcrowding in dormitories or sanatorium, and the statutory distance of six feet between beds had definitely *not* been observed. In the presence of an epidemic, this spacing precaution should never be forgotten, however inconvenient its practice may be. It is probably the most important single factor which can be kept under direct control in the prevention of complications by cross-infections. In family, school, and hospital practices when accommodation is under pressure in epidemic illness there is the tendency to allow the distance between beds to diminish on the plea that the occupants are suffering from the *same* disease. Such practice may be a domestic convenience but is a grave source of danger to the sufferers, and every possible endeavour should be made to ensure that a patient is secured from cross-infection from a neighbour by means of adequate spacing or shelter in the form of partitions.

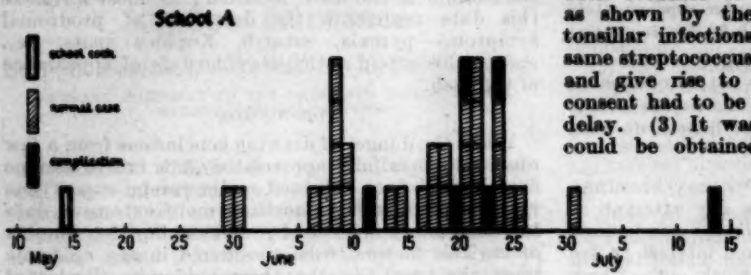


FIG. 1.—Measles in School A in 1929.

School B (1930).—Dr. Glover's recommendation as to spacing was rigidly observed and to this largely I attribute the fact that there was only one complicated case, a severe broncho-pneumonia. Protection by means of convalescent serum obtained from Dr. D. N. Nabarro was given to three especially delicate boys: two had minimal attacks, one escaped. No further attempt to influence the course of the epidemic was made, and yet it is to be noted that 30 per cent. of the susceptibles escaped.

School B (1934).—A case of measles developed on the fourth day after opening school, the rash appearing on the first day after isolation in the sanatorium, thus giving four full days' exposure to 50 susceptibles. It was decided to attempt mass prophylaxis about the sixth day after exposure, and to aim at attenuation. This decision was influenced by the following considerations: (1) In the Easter term there had been an epidemic of whooping-cough and five cases complicated by broncho-pneumonia, while independently there had been evidence of an active streptococcal infection as shown by the occurrence of acute sinus and tonsillar infections and it seemed likely that the same streptococcus would be resident in a few throats, and give rise to complications. (2) The parents' consent had to be obtained, necessitating a few days' delay. (3) It was problematical how much serum could be obtained since there was no public or commercial supply.

By the kindness of Dr. Nabarro and Dr. S. C. Dyke, a limited supply of serum sufficient for 12 boys was obtained, the serum for the remainder being obtained from volunteer donors recently recovered from measles. Of the 50 contacts serum was refused by the parents of 3 boys, but at the same time the parents offered to remove 2 boys over the period of the first and second generations in order to avoid prejudicing the outcome of the experiment. These boys later returned to school and escaped measles. The third boy remained in the school and was given serum after the appearance of the first generation; he escaped measles.

The facts are set out in Table IV.

The uniform dose given was 6·0 c.cm., a few very small boys getting 5·0 c.cm., and a few very large boys getting 8·0 c.cm. This absorbed all the available serum. These doses are slightly less than those recommended by Nabarro, who states that protection is usually secured by administration before the sixth and attenuation if administered from the sixth to the ninth day.

All three boys inoculated on May 15th (8–11 days after exposure) developed measles in its normal vigour, and constituted the first generation. One case with the usual prodromal temperature and Koplik's spots for five days, during which period he was isolated before producing the rash; the remaining two developed the rash with explosive suddenness and an entire absence of prodromal symptoms on the 20th and 21st day after the last possible date of exposure. Morning and evening temperatures of every susceptible had been taken from the 7th day after th isolation of the initial case to secure the earliest detection and isolation of infected cases, and this procedure was only discontinued after the development of a second generation. The course of the epidemic is seen in Table V.

The school broke up on August 3rd, out of quarantine, 21 days having

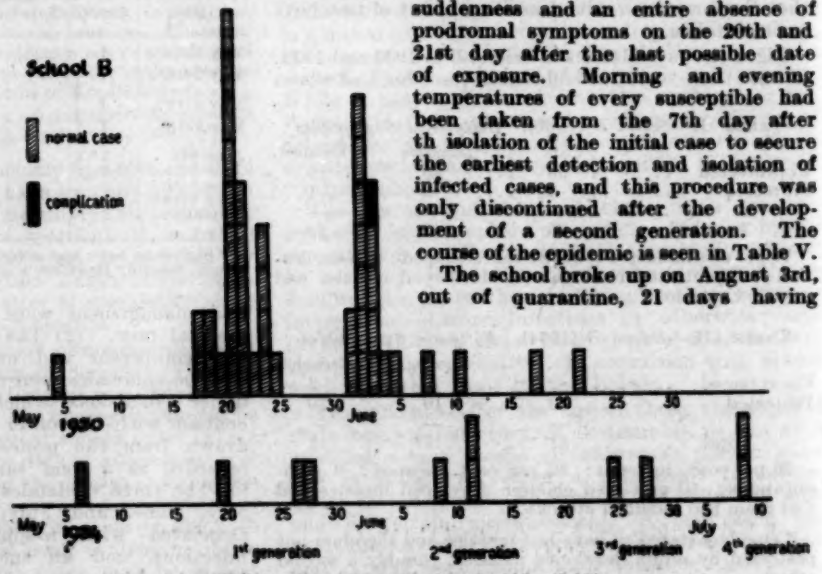


FIG. 2.—Measles in School B in 1930 and 1934.

been observed from the appearance of the last two cases.

Comparing the two epidemics of School B 1930 and 1934, these have the following common features: (1) The initial case had in each epidemic been in contact with the available susceptibles for four days before isolation and the rash developed the day following isolation. (2) The season of the year was identical and no coincident infection present in either case. In 1934 the use of serum altered the percentage of escape from 30 per cent. to 80 per cent., and the 20 per cent. who were affected escaped any complications. (Table VI.).

TABLE VI

Year.	Total.	Susceptibles.		Measles.	Escaped and per cent.
		Unprotected.	Protected.		
1930 ..	68	65	3	48	20 (29·4%)
1934 ..	51	2	49	11*	41 (80·3%)

* Includes one boy stated to have had measles two years previously and possibly second attack.

COMMENTS

In the first place it is important to state that the outcome of the experiment was contrary to expectation and intention. The expectation on the basis of the 1929, 1930 epidemics was that in 1934 there would be two well-marked first and second generations followed by a minimal third generation and that the epidemic would then die out. The intention was to attenuate the disease in those infected, thereby diminishing the risk of complications and ensuring that a permanent immunity to measles was secured. To attain this end the sixth day approximately was selected as the day of injection and 1·0 c.cm. of serum less than recommended by Nabarro was employed. Complete protection from measles was not the object of the experiment, such a practice having no merit whatever, either from the point of view of the individuals or of the school concerned. The only exception of course being in the case of specially delicate boys or boys suffering from intercurrent illness who should be given complete protection by serum and then isolated from further contact. In the 1934 epidemic no boys were in this category, nor was there any coincident epidemic infection.

The failure to achieve the desired result can be explained in two ways:—

(1) That the serum employed was unusually potent in immune substances and its action lasted longer than the three to four weeks which is usually considered to be the limit of its effect. As pointed out above, the dose given was on the average 1·0 c.cm. less than recommended by Nabarro to secure attenuation and was given on the average six days after exposure.

(2) That the passive immunity due to the serum was appreciably increased by the acquisition of a natural immunity due to the exposure of the susceptibles to minimal doses of the virus at convenient intervals. The knowledge that an epidemic was in progress led, as always, to the early detection of infected cases and the passive immunity due to the serum in many instances shortened or eliminated the prodromal stage in those who succumbed, thereby reducing their infectivity.

The wisdom or otherwise of the practice of mass prophylaxis or attenuation in boarding-schools is open to debate from many points of view, however desirable the prevention or attenuation of the disease may be in the case of selected individuals for special reasons of personal delicacy or temporary ill-health. Mass protection is obviously to be condemned for the reasons given above, in the absence of coincident epidemic disease. Mass attenuation is obviously a desirable end from the standpoint of the individual and the school, but is it feasible?

The following difficulties present themselves in the attempt to realise the desirable end of attenuation:—

There is at present no method of estimating the potency of the serum employed whether convalescent or adult. The data as regards doses are therefore empirical.

The practice recommended by various authorities is not uniform. To quote two only: One authority (L.C.C. public health department) recommended: (1) "the serum should be administered in the first three days after the earliest known exposure; the earlier the injection is made the more likely is complete protection to ensue"; (2) "attenuation may be achieved by injecting the serum on the 4th–7th days after exposure." Another authority (Birmingham public health department) recommended the administration of the appropriate dose of serum for protection or attenuation "to the contact on the day of the appearance of the rash in the patient."

From every point of view, the appearance of the rash is a sounder basis of calculation than the "date of exposure," which as pointed out earlier in the paper may be six days previous to the possibility of diagnosis.

To the plea for greater precision and uniformity in standard works as regards the basic data of communicability, incubation, and quarantine, is added a further plea for greater precision and uniformity in the practice of the serum therapy of measles.

Supply of serum.—Since the therapeutic administration of serum for protection or attenuation must be prompt to be effective, and since its preparation from suitable donors requires both time and care, a supply must be available in each locality. There is at present no central authority or commercial channel through which a supply of such serum can be obtained, and such a service must depend on local initiative.

In view of the importance and proved value of serum therapy in measles, the supply of this serum should be as in the case of other preventive sera, a responsibility of the public health service in each locality, but few local authorities have given attention to this problem. Only as the result of a special endeavour was sufficient serum obtained for the purpose of the present experiment.

Conclusions

(1) Three epidemics of measles in boys' boarding-schools are compared and the evidence suggests the importance of adequate bed-spacing in the prevention of complications due to cross-infection. (2) Convalescent measles serum protected 80 per cent. of the exposed susceptibles although attenuation only was intended. (3) The routine use of convalescent measles serum in schools is not recommended since this will only postpone the disease, and it is undesirable that boys from preparatory schools should move on to their public schools "epidemiologically innocent." Circumstances may exist, however, such as the coincident presence of another epidemic in which the use of convalescent measles serum may be considered justifiable and advantageous in reduction of the severity of the disease and of the development of complications.

CORRESPONDENCE

LONDON UNIVERSITY AND ITS MEDICAL SCHOOLS

To the Editor of THE LANCET

SIR,—A member of the teaching staff of a medical school and a registered student whose first acquaintance with London University was made through the final M.B., B.S. examinations, having contributed their several replies to the questions raised by Sir Ernest Graham-Little, perhaps a general practitioner who falls into Sir Ernest's class of university students who do not take the final examination may be allowed to put forward his experience.

It was my fate between the years 1919–24 to beat A Registered Student's "achievement" hollow, in relation, not to the final examinations, but to the first and second M.B.'s, as they were then popularly known. As I had good reasons for not desiring to remain in the medical school as distinct from the hospital longer than I could avoid, I found that the examination in anatomy and physiology of the Conjoint Board provided a way of escape into the wards. Although, after passing this examination, I did actually go straight into the wards, some months later I managed to satisfy the University requirements of the second M.B. examination. I had done no reading worth talking about before going up and after passing the Conjoint examination, and certainly no practical work in the subjects concerned, being fully occupied in my first hospital work. When I had finished all the hospital appointments required, not only for the final Conjoint examination but also for the final University examination, I found that sufficient time had elapsed for me to be eligible for the former, which I took in bits; but that, owing to the longer interval between the second and the final examinations demanded by the University and the late date at which I had passed their second examination, a year's further hospital work was required before I could take the M.B., B.S. In my case therefore the financial calculation in your leading article of Dec. 1st did not apply: I had already paid all the fees of both the Conjoint Board and the University except those for final examination, having paid when taking the second Conjoint for exemption from their first examination, on the strength of having passed the University first examination.

My choice therefore lay between taking the Conjoint final, or living for another year in London hanging round a hospital wherein I had already held all the appointments a student could hold, in order to take the University final. A very simple calculation showed that the fees for the final Conjoint would cost less than a year's living in London, with no visible means of support. The student who takes the Conjoint final for 40 guineas probably feels that this is cheaper than living in London until the University will condescend to examine him.

In my day the factors mentioned in the two letters you publish to-day all applied: the University demanded a knowledge of certain subjects out of all proportion to their relation to and importance in general practice. Although it is probably true, as A Registered Student says, that the General Medical Council do not look upon the final M.B., B.S. of London as a post-graduate qualification, it is difficult to avoid the conclusion that the University does: otherwise, why is this examination still what it was in my day, so markedly different from the Conjoint final and from the bachelorate degree examinations of the other universities? It would in 1924 have been true to say, and A Registered Student's letter shows that it is still true to say, that in actual fact the final M.B., B.S. examination of London can more fitly be compared with the final F.R.C.S. of England than with any other examination. In the one case the examining body demands a period of two years after qualification before the examination can be taken; in the other the vast majority of candidates find it advisable to allow at least this interval before they submit themselves. One of my contemporaries who desired to specialise in surgery took his examinations in this order: Final Conjoint, B.S., Final F.R.C.S., M.B. He only wanted the M.B. so that he could go on to the M.S., which was his last examination.

He belonged to a large class of men to whom the M.B., B.S. is of some real use: men who wish to specialise or who enter a service where post-graduate qualifications are of value. Except to a F.R.C.S. who is in practice near a cottage or other small hospital post-graduate qualifications are of no use to the general practitioner: the majority of London University students are destined for general practice and find that the University training with the Conjoint qualification is adequate to their requirements. After they have qualified what they need is experience of general practice, not further hospital work which they have to undertake before they can sit for the M.B., B.S.

It is very kind of Sir Ernest Graham-Little to offer us some academic recognition of having done three or more years' university work and having passed an examination roughly equivalent to the B.A.; but in my opinion that recognition should take the form of giving the B.A. degree to everyone who has passed or who passes the second M.B., B.S. The subjects taken in that and in the preceding examination may be scientific in a sense, but they are not sciences in the sense that pure physics or chemistry or mathematics are. Their applicaton to surgery, medicine, and obstetrics is an art; the daily practice of our profession, whatever our individual métier, is certainly the practice of an art and not the pursuit of a science. And the passing of London University examinations in professional subjects, even if we have not taken the final M.B., B.S., is certainly an art unrelated to any known science.—I am, Sir, yours faithfully,

Manea, March, Dec. 15th. C. T. NORRIS.

To the Editor of THE LANCET

SIR,—In the correspondence arising out of Sir Ernest Graham-Little's letter, I think you may like to have the views of a secretary of a medical school. I have come to the conclusion, after a long experience, that the reasons why so many students fail to complete their course for a London degree are mainly as follows:—

(1) *The disadvantage to the student of having to take the whole of his examination at one time.*—At present a London student cannot take *any* part of his final examination until he has been at hospital for three years. In this respect he is at a distinct disadvantage compared with the Cambridge man who takes his surgery and midwifery after two and a half years; and with the Oxford man who can take his forensic medicine and pathology separately after two years' hospital work.

(2) *The inclusion of forensic medicine and hygiene in the final examination.*—So far as most students at London medical schools are concerned the London M.B. examination is the only final examination in which forensic medicine as a full subject is included, and failure in that subject means failure in the whole section of the examina-

tion which includes medicine, pathology, and forensic medicine.

(3) *The interval between a diploma qualification and the earliest date at which the final M.B. examination can be taken.*—By the time a diploma has been obtained, many parents have almost exhausted their financial resources, and the opportunity of earning money is eagerly seized upon by the student. It is absolutely essential that this intervening period should be reduced as much as possible as a student very quickly gets out of training for examinations, and in many cases never really regains the necessary state of concentration for the purpose.

To overcome these, to my mind, disadvantages, I would suggest :—

(1) *That entry for the examination in surgery, obstetrics and gynæcology should be permitted (as at Cambridge) after a student has completed two and a half years of hospital work.*—At this time in their clinical work students are quite prepared for such an examination, and the passing of it then would encourage them to such an extent that the majority would be certain to work hard to complete their degree examination six months later. Many students feel that they must either take the whole examination on the first possible occasion, or obtain an appointment; but the prospect of taking five subjects at one time is felt by most of them to be too great a task (especially after they have already worked up and passed most of the same subjects for their diploma examinations), and the danger, a very real one, is that they gradually settle down in practice without their degrees.

(2) *That forensic medicine and hygiene should be a separate examination which could be taken at the end of the second year of hospital work.*

(3) *That candidates who pass the second M.B. examination in July should be allowed to take their final examination in the May next but two following.*—As the second examination is held early in July, and the May final examination goes on into June, this would not be a great concession; but the present interval (from the April diploma qualification to the November final degree examination) from April to November is a very critical period, and many leakages occur because of it. Incidentally the Oxford final examination can be taken after 33 months of hospital work.

If these alterations were made I feel convinced that an improvement in the present state of affairs would commence almost at once, and that in a few years the proportion of those who complete their London medical degrees would be at least as high as the corresponding figures for Oxford and Cambridge.

With regard to Sir Ernest's suggestion for the institution of a new degree after a three years' course, while it would undoubtedly appeal to some of the best students, I fear that if the standard of the first and second examinations were raised the majority of candidates would give up all idea of obtaining a degree.

In the original letter it was stated that the number was glaringly small of students who completed, compared with those who commenced, courses for medical degrees. At this school the entries of London degree candidates for the ten years 1919–1929 have been analysed with the following results :—

(*a*) Completed their London M.B., B.S. Degrees..	51%
(*b*) Diploma qualification only (up to present time)..	48%
(*c*) Did not proceed to any final examination ..	1%

I am, Sir, yours faithfully,

S. C. RANNER,
Secretary, King's College Hospital Medical School.

Dec. 15th.

To the Editor of THE LANCET

SIR,—That extraordinary mental marathon race, the final London M.B., B.S. examination, is much in the public eye at the moment. It is in the hope that those who are revising the London University medical curriculum may be interested to know the feelings of a candidate that I jot down what follows.

The London M.B. lasts 25 days. It includes 7 papers, 1 practical examination, 4 clinical examinations, and 6 viva voces (2 of which consist of 2 parts, hygiene and forensic medicine, and midwifery and gynæcology). The candidate for the complete examination has to have a fairly comprehensive knowledge of the following subjects:—

General Medicine, including Neurology, Dermatology, Psychiatry, and Pædiatrics.
General Surgery, including Anatomy, Operative Surgery, Oto-rhinology, and Ophthalmology.
Pathology, general, special and chemical.
Bacteriology.
Hygiene and preventive medicine.
Forensic Medicine.
Toxicology.
Midwifery, Gynæcology, and Infant Welfare.

To carry this enormous amount of information in the head at one time is a feat which can be achieved in one way only—by concentrated cramming. The candidate must certainly have a sound clinical knowledge as well, but to be able to write an adequate answer to every possible question in our seven papers necessitated, in my case at any rate, an almost complete cessation of clinical studies for two months. I feel proud to *have had* the knowledge (I have already forgotten much of it) to have passed the London M.B., but I am certainly not a better doctor for having done so.

A candidate whose practical experience is far greater than mine, and who has a really sound general knowledge of medicine, has just failed the whole examination for the second time. It has wasted one year of his life since qualification. The reason for his failure was an inadequate book knowledge. Until two months before the present examination, he had been forced, for financial reasons, to do locums. Imagine the poor fellow's feelings!

In my opinion, London can learn much from Cambridge. The M.B. should be taken as a routine in two parts. It should be possible to take the surgical half two to two and a half years after the Second M.B., just after one has passed the Conjoint Midwifery and Surgery. The medical half should be taken six months later, when the Conjoint Pathology and Medicine have been disposed of. Finally, the successful candidate should have to write a thesis.

The late Lord Grey's remark about the Germans—that they have an incomparable knowledge of facts and an incomparable ignorance of the meaning of them—may, with an element of truth, be applied to the successful London candidate. Medicine contains an almost infinite number of facts. For my own part, I would far rather be able to correlate two of them to produce a third of importance, than know the lot. The value of a graduating thesis is not that it adds to science, but that it teaches the writer to think for himself—a feature all too rare among London students.

At present, there are three reasons why the average man takes the whole M.B. at once. The first is financial. If there is the faintest hope of passing the whole at a single shot, and thus avoiding six months profitless swotting which would otherwise be spent in house appointments, any man will take the chance. The second and third appeal to the cupidity of the better candidates—the hopes of honours and the gold medal. It is perhaps reasonable that the super-man who gets the gold medal should have to take the whole examination at once. But why not give

honours where they are due, even if the recipient does not know all about some entirely different subject? The examination should take as its standard the ordinary man, and not the brilliant exception.

I hope that it will not be thought that my views are entirely due to examination jaundice and "sour grapes," since I myself obtained only one distinction. My failure to obtain more was entirely according to my deserts. Nothing could be fairer than the conduct of the examiners. Even to the bitter end they remained charming. The intense physical and mental strain of 25 days (including Saturday afternoons) of concentrated brain-testing must be almost as trying for them as for the candidates.

I am, Sir, yours faithfully,

Dec. 15th. A SUCCESSFUL CANDIDATE.

To the Editor of THE LANCET

SIR,—A strange statement appears in Prof. F. J. Browne's letter in your last issue. He suggests that forensic medicine and public health are academic subjects with little relation to daily experience in general practice, and that the examinations in these subjects should be taken (say) at the end of the fourth year. I cannot speak for forensic medicine, although I should have thought it a highly practical subject, affecting the daily work of many practitioners. But it is the reference to public health which surprises me, for it would be hard to think of a subject which is less academic. It is usually taught, both in London and the provinces, by men engaged in the public health service, and the teaching puts emphasis not only upon the application of scientific knowledge to the prevention of disease, a matter surely of great practical importance to every medical man and woman, but also upon the machinery afforded by central and local governing bodies for securing that such knowledge is applied in an organised way. With these bodies the general practitioner has to work in the closest coöperation to an ever-increasing extent. To relegate this part of the student's training to a stage of the curriculum when he is hardly capable of understanding the terms used, and, by inference, to suggest that the knowledge imparted has little or no bearing upon his future work, would be a peculiar act in these post-war days of State medicine.

I am, Sir, yours faithfully,

Cardiff, Dec. 17th. RALPH M. F. PICKEN.

*** Stimulated by this correspondence our contemporary, *Guy's Hospital Gazette*, has made an interesting analysis of the record of men entering Guy's during the period 1920 to 1926 with the intention of studying for the M.B. Out of a total of 293 only 110 completed the degree although 86 passed the second M.B. The *Gazette* remarks that this is a very large proportion in view of the fact that the final M.B. is probably no more difficult in itself than the earlier examinations. The reason given for the defection is that after passing the final Conjoint the M.B. candidate generally takes a series of house jobs, and having completed these, he is disinclined to sit down and relearn a great deal of material which he believes will not be useful to him in his future work. The remedy suggested by the *Gazette* is to give the London student the same liberty as his Cambridge colleague to take half his final examination two and a half years after entry to the wards. Having completed part of his final before taking a house appointment the stimulus to complete the M.B. would be much greater.—ED. L.

THE REBUILDING OF ST. GEORGE'S HOSPITAL

To the Editor of THE LANCET

SIR,—An appeal for funds is being made to rebuild St. George's Hospital. It is to be hoped that it will be successful, but the question then arises where it is to be rebuilt. To remove the hospital would be to leave London from Charing Cross and Westminster to the West London Hospital at Hammersmith—a matter of three miles or so—practically without a large hospital to minister to its wants.

It may not be out of place to bring before the medical profession and old St. George's men some of the aspects of a very controversial matter. An expensive site in a bad position near Hyde Park Corner will not meet the requirements of the case. To go to the suburbs would be fatal. In both cases legacies and subscriptions would infallibly be lessened.

St. George's has always been pressed for room. In the seventies of last century Mr. George Pollock, one of the surgeons, wanted the hospital to buy two of the adjacent houses; the price was then a very low one—£3000. The weekly board did not do this, and much later four houses in St. George's-place had to be bought at a price of £64,000. Late in the last century and early in this one proposals were made to endeavour to sell the site and move the hospital elsewhere. Although most of the house committee and the two senior members of the medical staff were in favour of this scheme as was also Lord Plymouth (treasurer) and the deputy-treasurer, Mr. William West, at a very large meeting of the governors it was rejected by a large majority, including all the members of the staff (some 28) except two. It was pointed out that St. George's lived on its legacies; that the hospital got them because of its prominent position at Hyde Park Corner, near which so many rich people lived, and that its position near the open parks could hardly be bettered; that the results obtained at the hospital were equal to those of any other hospital; and that the site—being held partly by the governors (one-third), partly by the governors and the Duke of Westminster on a peppercorn rent so long as the building on the site was used as a hospital (one-third), and the remaining one-third by the Duke—could only be sold for an adequate sum with very great difficulty. The first Duke of Westminster with characteristic generosity later on offered, if he was able, to give up his rights to the share which he held with the hospital. His death shortly after this offer was an irreparable loss to the hospital of which he was treasurer.

To allow those who wished to sell the site to have an object-lesson of the difficulties, those who were against the scheme offered to allow the site to be advertised for sale for a period of a year. This was accordingly done and done again, but no adequate offer was made. There was one of £300,000 but without sufficient security, and the suggestion of removal did the hospital and medical school much harm. Various minor improvements (kitchens, out-patient department) were made, but schemes for amalgamation with Westminster, the parent hospital, and with University College Hospital came to nothing. In 1916 there was a question of rebuilding of the hospital on its present site and Mr. Adams, the architect, made plans and drawings with this in view, but on the ground of expense nothing eventuated. After the war the present joint treasurer, Lord Greville, wrote to the *Morning Post* that all idea of removal had been finally given up.

St. George's, like other hospitals, has felt the bad times and there has been and still is a huge overdraft; but it has been saved once again by legacies. The medical staff recently would not accept any diminution of the number of ordinary beds and the increase of paying ones as suggested by the treasurer, so this possible method of balancing accounts has not been adopted. Of late years there has been much talk of selling the site and moving the hospital elsewhere; in fact, the house committee by the treasurers went so far as to pay £1000 for the option of a site for a year. This money, of course, has been wasted, and it seems to me that the treasurers and house committee were hardly in order in their procedure. They are only empowered to spend up to £1000 without consultation with the governors on alteration or repair of the building—not for the option of a new site. No such consultation was taken in this case; in fact, there had been no general court or meeting of the governors to consider removal since the pre-war meeting when by a large majority they decided against removal, although the then treasurer, deputy-treasurer, and a large number of the house committee advocated this course.

At the meeting of a court of governors on Oct. 31st, 1934, a resolution was carried to rebuild St. George's Hospital on its present site "or elsewhere." Everyone admits St. George's must, if possible, be rebuilt—there is not room to do the work properly under its present arrangement. Two more stories can be, if necessary, added to the hospital. There are a great number of people who are against giving up its unique position and think that it would be bad *business* to do so. Sentiment, too, is against removal, but that should not be considered except on the ground that Hyde Park Corner attracts a good class of student and a good class of nurse. The present site appeals also to the numerous St. George's men scattered throughout the country who will be most useful in collecting funds for rebuilding but who might not be so keen if their old hospital is to be removed elsewhere. It would seem that only if St. George's cannot be rebuilt on its present site it would be well to go "elsewhere," and then difficulties of upkeep will probably be very much greater.

I venture to write as one who has served 50 years on the weekly board and house committee; who has served 30 years on the acting surgical staff, and has been consultant surgeon since 1918; was a member of medical school committee for 30 years, and for six years its chairman; who was for some 17 years a visitor for King Edward VII. Hospital Fund; and has been a life governor of the hospital since 1880. To show I am no "diehard" in advocating the retention of the present site, I may mention that in the past I represented the hospital, both when an amalgamation with Westminster, and again when one with University College was on the tapis. Both schemes would have involved moving the site, but both were impracticable.

I am, Sir, yours faithfully,

Hove, Dec. 12th. GEORGE TURNER.

UTERINE CONTRACTION

To the Editor of THE LANCET

SIR,—A recent communication by Dr. Chassar Moir, read before the Edinburgh Obstetrical Society (Edin. Med. Jour., August, 1934), impels me to raise through your columns a pertinent point which ought not to go unmentioned, especially as it bears upon an apparent discrepancy between his clear-cut results and the equally clear-cut results of Prof. H. Knaus, of Graz, whose work is now widely accepted the world over. Moreover, Dr. Moir's results challenge experimental data of Dr. Willard Allen and myself, obtained under controlled experimental conditions in the unanæsthetised rabbit, in which we showed that potent extracts of corpora lutea exert a powerful *inhibiting* influence upon uterine contractions (Amer. Jour. Physiol., 1932, cii., 39). Recent unpublished data show that crystalline progestin is endowed with this property, 0·2 mg. being sufficient to inhibit maximal œstrin-induced contractions in five hours.

It is surprising, therefore, to learn that Dr. Moir finds evidence of spontaneous uterine contractions during the latter part of the menstrual cycle, concurrent with the existence of a corpus luteum. In the light of controlled experimental data, this circumstance, I feel, should cause one to look for other than hormonal factors as a cause of the discrepancy, and I submit, on the basis of Schultze's findings (Zentralbl. f. Gynäk., 1931, xlii., 3042), that the results of this investigator as well as of Moir are explicable on the basis of purely local, intra-uterine factors. Schultze found that in the early interval the uterus is so irritable that it does not retain well the lipiodol which is placed in the uterine cavity, but passes it up the tubes. Later, after the mid-interval, the uterus is so sluggish that it becomes well distended with the oil. The *necessary physiological consequence* of this is that if contractions occur spontaneously or if they be induced by sudden distension, mechanical (Schultze) or chemical (Moir) means, the length of the muscle-fibres of the uterus is so increased and the intrinsic irritability of the tissue so altered that relatively feeble contractions give a net recorded effect of considerable magnitude. From this point of view the conditions in the latter phase of the cycle are not dissimilar from what one finds in the expulsive capability of a compensated heart. I have recently witnessed an example of this. After injection into a rabbit of 0·6 mg. of crystalline progestin, which dosage in more than a dozen other rabbits effected *inhibition of motility* within two hours, the rhythmic contractions nevertheless continued, with increased force and a progressive loss of tone, so that after four hours the contractions exceeded the pre-injection motility by more than 200 per cent.! At the end of this time, when the experiment was terminated, it was found that the balloon had become weakened on one side, giving rise to an aneurysm. As a result its capacity was increased at least fivefold. It is evident, therefore, that the hormonal influence of the progestin was completely over-ridden by alterations in the *physical relationship* of the uterus to the recording system.

It seems possible, then, that a relatively high degree of tone in the early interval should minimise the possibility of intra-uterine distension, and so reduce appreciably the contractions recorded at this time. This is what Dr. Moir has found. On purely physiological grounds the converse may be said to hold true, while there is low tone associated with the corpus luteum, as Schultze reports.

In conclusion, I should like to refer to Dr. Pompen's excellent work (Thesis, Amsterdam, 1933) in which he shows that the action of œstrin on uterine muscle is to *coördinate* otherwise uncoördinate contractions over the whole surface of the uterus. The result of this action is to induce rhythmic contractions, as I had found previously (Amer. Jour. Physiol., 1931, xcvii., 706). It would appear, then, that the effect of progestin is not to render the uterus *quiescent*, as I had suggested, but rather to render *uncoördinated*

the rhythmic character of œstrin-sustained contractions of the uterine fistula in unanæsthetised rabbits.—I am, Sir, yours faithfully,

SAMUEL R. M. REYNOLDS, A.M., Ph.D.,
Assistant Professor of Physiology.
Department of Physiology and Pharmacology,
Long Island College of Medicine,
Brooklyn, N.Y., Nov. 22nd.

*** Dr. Chassar Moir's paper was summarised in THE LANCET, 1934, i., 738, and his work discussed in a later issue (p. 1070).—ED. L.

INTESTINAL PARALYSIS FOLLOWING DIPHTHERIA

To the Editor of THE LANCET

SIR,—It would interest me greatly to know whether any of your readers have come across cases similar to those of which I append short notes. The physical signs were those of a well-marked post-operative ileus, and I think there can be little doubt that they were due to intestinal paralysis following diphtheria. The first case was much the most striking, although the others were quite as definite while they lasted.

CASE 1.—A boy aged 8½. Admitted to hospital on July 30th, 1934, with an indefinite and unsatisfactory history. It was said to be about the fourth day of illness. The throat was congested but there was no membrane. The nasal swab was positive. There was severe paralysis of the palate, but of no other part. On August 1st abdominal distension of marked degree was found to be present. The distension was general, and it was tympanitic on percussion. The bladder was not distended, and liver dullness was approximately normal. There was no evidence to suggest dilatation of the stomach. Partial relief was obtained by enema, but the distension promptly recurred. Pituitrin ½ c.cm. was injected with no result. Acetylcholine 0·05 g. was then given, and another enema later. On August 2nd distension was still present, but was not so great. An enema gave a poor result with much flatus. It was not possible to say that the abdomen had returned to normal until August 9th, and enemata had to be continued until the 23rd. Complete recovery followed.

CASE 2.—Boy aged 5½. Admitted Oct. 1st, 1934, on the third day of illness. The throat was covered with membrane, and there was rhinorrhœa. Toxæmia was evident. The throat swab was positive. On four occasions, Oct. 16th and 29th and Nov. 7th and 23rd, he developed abdominal distension, with exactly similar signs to the last case, and equally severe. He responded rapidly to enemata on each occasion, but these had again to be continued for some days before aperients became effective. He also showed signs of intestinal toxæmia for some weeks, having a thickly furred tongue and a slight temperature which defied treatment. He is still in hospital, but is getting up.

CASE 3.—A boy aged 5 was admitted on Nov. 6th with patches of membrane on either tonsil, moderately ill. The throat swab was positive. On Nov. 9th he also distended suddenly and definitely, but an enema relieved him and there was no recurrence. He was discharged well.

I am, Sir, yours faithfully,

A. E. GAMMIE,
Medical Superintendent, Mogden Isolation Hospital, Isleworth.

Dec. 15th.

TETANUS: A REQUEST FOR CASES

To the Editor of THE LANCET

SIR,—May I solicit the collaboration of your readers in a field of research? Our investigation of certain plant ingredients of curare has enabled my chemical collaborator, Dr. Harold King, of the National Institute of Medical Research, to supply me with curarine in pure form. This is the alkaloid responsible for the classical action of curare in paralysing muscular activity. During the past 18 months the action of curarine on animals and on man has been under full investigation. There is one condition—that of severe tetanus poisoning—in which not only may curarine be an effective weapon therapeutically, but in which the drug may have to be given in large dosage. During the past year Dr. Leslie Cole, of Cambridge, has recorded his impression (THE LANCET, Sept. 1st, p. 475) that crude curare given in small doses may assist cases of tetanus. The advent of curarine has increased the possibility of large, accurate, and safe dosage in severe cases of the disease. But if large doses are to be given, a means of artificial respiration must be available, in the event of serious weakening of the respiratory muscles. In a case in Oxford, which I saw and treated last April (by courtesy of Dr. Mallam), I put the patient into a Drinker respirator. I think that the efficient and portable Bragg-Paul respirator would be the present choice.

From time to time cases of tetanus, with symptoms arising within three or four days of infection, are such that a fatal prognosis can be made with little hope of error. I think curarine combined with artificial respiration may possibly save life in some of these cases. If any of your readers can assist me to see and treat such a patient, I shall be most grateful. I can reach cases within 100 miles of London or Oxford within a few hours of word being received at either of the addresses below. I shall have with me all the apparatus necessary for treatment, which can be undertaken in either a hospital or a private house.

It should be emphasised that this treatment is still at an experimental stage. Supplies of curarine are limited, the drug requires very cautious handling, and large dosage is only safe in experienced hands and only justified in severe cases.

I am, Sir, yours faithfully,

RANYARD WEST.
University Department of Pharmacology, South Parks-road, Oxford. (Tel.: 3562.)
The Dreadnought Hospital, London, S.E.10. (Tel.: Greenwich 1881.)

Dec. 15th.

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—I am fortunate in having induced so authoritative a critic as Dr. Colebrook to discuss the suggestion that pregnant women should, in certain cases, be given streptococcal antitoxic serum prophylactically. It is to be supposed that his destructive criticisms are the most weighty that can be advanced; and the result is reassuring. His criticisms of a method which he has not tried are mainly based on experiments which he has not performed with animals which are not susceptible to streptococcal toxin.

May I take his criticisms in their order? He asks whether I suppose that no one has hitherto considered the question. In my first letter (a short one) I pointed out that the proposition was old, and that, in fact, the method was in limited use. He next, rightly, states that the pioneer work on the matter was done by Parish and Okell,[1] although I have no knowledge of the views of these authorities on the merits of serum prophylaxis in puerperal sepsis. My assurance, however, is far from being based exclusively on their work. I have myself continuously from 1928[2] to the present day confirmed on scores of rabbits their results with streptococcal strains from puerperal and other sources. In my experiments, however, I have administered the serum either five minutes before or

[1] Parish, H. J., and Okell, C. C.: Jour. Path. and Bact., 1927, xxx., 521.
[2] Pulvertaft, R. J. V.: (a) Brit. Jour. Exp. Path., 1928, ix., 277; (b) THE LANCET, 1929, ii., 318; (c) Westminster Hosp. Rep., 1934, xxii., 218.

within one hour after the intravenous injection of living streptococci, and have found the animals in many cases to survive up to *six weeks*, at which date they were killed. When examined, they almost all showed, as Parish and Okell found, abscesses in the joints and serous cavities, especially the pleura, rarely the peritoneum, very rarely the pericardium. Without antitoxin, living cultures or toxin alike kill, usually within 10 hours, almost always within 48 hours.

These experiments are crucial. The rabbit, especially as I first showed,[2a] the chinchilla breed, is the only animal known which resembles man in reacting both to the toxic and pyogenic action of the hæmolytic streptococcus. The septicæmic patient, including the puerperal woman, in a fatal case dies most often in the stage before abscess formation. When pus forms, as Hippocrates knew, prognosis improves, though even then toxic damage is a factor; and the surgeon now comes into his own and evacuates the pus. To be effective, the antitoxin must be administered to the rabbit not more than one hour after the toxin or organisms; hence my insistence on prophylaxis. I maintain that death in the pre-abscess phase of human septicæmia is death, mainly from toxin. If that be true, then such death can be in part prevented by prophylactic antitoxin. I am not seeking to prevent infection; no pyogenic antitoxin at present known will do that. It will neutralise the toxin; the pyogenic effects will undoubtedly remain, though they may, I believe, be limited. But it is not pus that kills the septicæmic in most cases. If I am wrong in thinking that early septicæmic deaths are toxic, there is no valid basis whatever for my suggested prophylaxis. My opinion is not, however, based on a misinterpretation of old work, and ignorance of later work, as Dr. Colebrook suggests, but on ten years' work in the post-mortem room and six years of experiment with streptococcal toxin.

Dr. Colebrook next states that I have overlooked work since 1928; I have, in fact, followed it very closely. His first citation of such work is the inefficacy of Dick-toxin immunisation in preventing infection by the hæmolytic streptococcus. This is really irrelevant, because I am not, at the moment, advocating active immunisation, although the beneficial action of such a technique in the puerperium has been suggested by Burt-White.[3] It is far more to the point to say that prophylactic passive immunisation by antitoxin, in institutional epidemics of scarlet fever, is almost universal to-day, and is undoubtedly effective in checking the epidemic. But here again I repeat that the limitation of infection in childbirth is not my objective; it is the lowering of the death-rate.

He next quotes a singular paper by Penfold and Butler [4] on the inefficacy of antitoxic and other sera in protecting mice against hæmolytic streptococci. The inefficacy of sera other than antitoxic is beside the point: it agrees, however, with my experiments in rabbits. But is Dr. Colebrook aware that the mouse is practically immune to streptococcal toxin, as was shown both by Hartley [5] and myself in 1928? The human being *is* susceptible, and to a degree incomparably greater than any animal; cases have been reported of severe general reaction caused by the accidental inoculation of one drop of concentrated toxin in the human conjunctiva, in spite of immediate irrigation. I have personally, after many experiments with puerperal and other strains, abandoned the mouse as an experimental animal in streptococcal experiments; its susceptibility to individual strains bears no relationship to results in the rabbit, or clinical observation in man. The experiments he quotes show clearly that the mouse is not protected against a substance to which it is not susceptible; it is doubtful whether this was worth proving.

His next criticism is valid; a serum-sensitive patient might quite possibly be hindered rather than helped; only experiment would prove the point in man; but how many women are in fact already sensitised?

His forthcoming paper on the injurious results of antistreptococcal serum in treatment will probably be the subject of discussion when it appears; but, as he himself states, it is without relevance to the present matter. His question, "Have we any reason for believing that an agent which apparently is capable of harmful effects during the early stages of an established infection will have a directly opposite effect at the very beginning of such an infection?" is, however, also irrelevant. I am advocating prophylaxis, before any infection; I have already said that my experiments on rabbits show clearly that anti-toxic serum is valueless one hour after an intravenous dose of living streptococci.

I am reminded of a quite possibly apocryphal anecdote current during the war. It was stated that, on the day on which the first Handley-Page aeroplane bombed Constantinople, a learned physicist forwarded his delayed report to the authorities, proving that the aeroplane could not leave the ground, and if it did would break up. Dr. Colebrook's criticisms are made within a short time of a communication by Dr. G. W. Theobald,[6] whose suggestions on this matter long antedate mine, stating his confidence, as the result of experiment, in the efficacy of prophylactic serum; personal communications from obstetricians assure me that some, at least, are convinced of its value, and I myself have employed it with success in the prophylaxis of post-mortem room wounds. Serum sickness will certainly result in many cases; but only experiment will show whether the saving of life will compensate for its minor horrors.

All I am asking is that a reasonable suggestion based on experiment should not be condemned untried, especially on grounds entirely irrelevant. Perhaps those who are as yet unwilling to adopt this method of prophylaxis in an entirely normal patient will give it a trial in the case of any prolonged or instrumental labour.

I am, Sir, yours faithfully,

London, Dec. 17th. R. J. V. PULVERTAFT.

[3] Burt-White, H.: Brit. Med. Jour., 1928, i., 975.
[4] Penfold, W. J., and Butler, H. M.: Med. Jour. Australia, 1932, i., 717.
[5] Hartley, P.: Brit. Jour. Exp. Path., 1928, ix., 259.

NEW AGGLUTINATION RACK

To the Editor of THE LANCET

SIR,—I have devised a modification of the Dreyer type of agglutination rack, which consists in enlarging the holes in the lower shelf to the same size as those in the upper shelf and in raising the position of the lower shelf to only 1·5 cm. below the higher one. When the Dreyer tubes are dropped into the rack, they are arrested by their flared mouths fitting the holes of the upper shelf.

The advantages found in use in a large routine laboratory are: 1. A saving of time in dropping in the tubes, as no care is necessary to ensure their pointed ends sitting properly in the small holes of the lower shelf as in the usual rack. 2. A saving of tubes, as there is no chipping or cracking of the pointed ends through hitting the shelf when being

[6] Theobald, G. W.: Brit. Med. Jour., Nov. 10th, 1934, p. 850.

dropped in. 3. An uninterrupted view of all the tubes is easily obtained.

The racks are obtainable from Charles Hearson and Co., or Baird and Tatlock and Co.

I am, Sir, yours faithfully,

B. R. SANDIFORD, M.D.,
Chief Bacteriologist, Public Health Laboratories, Cairo.

Dec. 1st.

INSULIN HYPOGLYCÆMIA

To the Editor of THE LANCET

SIR,—Dr. Cooke's interesting article in your issue of Dec. 8th (p. 1274) omits a comparatively rare symptom of hypoglycæmia which is so alarming that every practitioner who treats patients with insulin should be acquainted with it—namely, hemiplegia. Either side may be affected, although my first three cases were paralysed on the left side.

The sensations described by intelligent patients seem almost innumerable, and a number of patients state that they suffer from sensations which they are are unable to describe. The relative frequency with which my patients complain of hunger as a symptom of hypoglycæmia is very much greater than in Dr. Cooke's series. It has been my custom for several years to make the patients acquainted with the symptoms of hypoglycæmia by personal experience, before they leave nursing-home or hospital, but occasionally attempts have failed whilst the patient has been in an environment where a severe attack could be treated without giving rise to alarm and an attack has developed spontaneously weeks later. Although the majority of my patients have a recurrence of the same symptoms at each attack a few never know what to expect, and are similar to the patient Dr. Wauchope describes in your last issue.

The main object of this letter is to draw attention to the fact that occasionally persistent hypoglycæmia develops, and then the decrease of ten units per dose, as suggested by Dr. Graham and which suffices in the majority of cases, fails signally. In those exceptional cases not only must all insulin be withheld, but fairly large quantities of carbohydrate must be given two-hourly perhaps for days until the sugar content of the blood has been raised to 0·20 per cent. for six hours. In these the cessation of the administration of carbohydrate leads to a fatal result—fortunately, these cases are very rare.

I am, Sir, yours faithfully,

Portland-place, W., Dec. 17th. O. LEYTON.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

EDINBURGH CHAIR OF CLINICAL MEDICINE

THE University Court has accepted the resignation of Dr. Edwin Bramwell from the Moncrieff-Arnot chair of clinical medicine in order to set him free for other professional duties. He has recently become president of the Royal College of Physicians of Edinburgh. The name of Bramwell has covered at least two generations in Edinburgh, and few names are better known in the medical profession than that of (Sir) Byrom Bramwell. He found time to write a great deal about his clinical cases, and his "Atlas of Diseases" was one of the finest books of its kind. The younger Bramwell has specialised more than his father did, devoting himself largely to neurology. He will be much missed as a teacher.

After consulting with the managers of the Royal Infirmary, the Court has appointed Dr. Edwin Matthew to the chair from Jan. 1st, 1935, the managers having agreed to continue his appointment as honorary physician to the Royal Infirmary to March 21st, 1936. Dr. Matthew, who is an Aberdonian and recently succeeded Prof. William Russell as representative of the Edinburgh College of Physicians on the General Medical Council, is known as one of the best clinical teachers in Scotland. He was Ettles scholar at a time when this distinction entitled the holder to be resident physician with Sir Thomas Fraser, a brilliant teacher and discoverer who was highly exact and exacting in his ward work. Dr. Matthew passed under his discipline and the quality of his teaching showed it at every hand. It is an open secret that the undergraduates wished the infirmary managers to prolong Dr. Matthew's tenure of office quite independently of this new development.

WELFARE OF THE BLIND

The Department of Health has appointed the advisory committee on the welfare of the blind for a further term of office, to advise the department on matters relating to the care and supervision of the blind. The committee is representative of local authorities in Scotland and of organisations and agencies for the blind, under the chairmanship of Ex-Bailie J. M. Rusk. The ophthalmic member is Dr. George Mackay, sometime president of the Royal College of Surgeons of Edinburgh, who has been associated with its work for over 20 years. He brings to the service of the committee his immense experience as ophthalmic surgeon to the Edinburgh Royal Infirmary, the Royal Blind Asylum, and many other public institutions.

THE NURSES' HOME AT BANGOUR

The Lady Provost, in opening a new extension of the home for nurses at Bangour Mental Hospital, said that though all good nurses were born nurses, the mental nurse must be one who loves her neighbour better than herself. She must be prepared to think and act for her charge. A great change had come over mental hospitals in the last half century, and the honoured place of Scotland was due in large measure to the increasing extent to which female nurses had been employed. With few exceptions all acute cases, male as well as female—being those that required the most skilful handling—were placed in the care of women. The results justified what had at first been looked on as a risky experiment.

There have been several local outbreaks of diphtheria and the county authorities are making an endeavour to interest the parents in preventive measures. In Forres (Morayshire) a councillor has put the pointed question: What is the use of closing schools while children are packed every night in amusement halls like herrings in a barrel? The question of Schick testing and immunisation is being canvassed.

The Dean of Guild Court has disallowed the synthetic stone proposed for the new maternity hospital; but the managers of Edinburgh Royal Infirmary are taking the matter up with the court. The saving on the use of ordinary quarry stone would be about £7000, and the managers are advised that the amenity of the city would not suffer from the appearance of the synthetic stone, which can be made to work harmoniously into the aspect of the building.

PUBLIC HEALTH

The L.C.C. Central Medical Staff

On Tuesday the Council was asked to accept a report reviewing the medical staff of its public health department in the light of experience of the working of the Local Government Act of 1929. The three positions of principal medical officer, now held by Dr. W. Allen Daley, Dr. W. Brander, and Dr. J. A. H. Brincker, are not in question. Besides these there are two area medical officers, three senior medical officers (in place of other area officers authorised), one senior medical officer for planning and development work, one (temporary) principal assistant medical officer, and one divisional medical officer. The position of the last-named has hitherto been allocated to the special hospitals division, the holder acting as assistant to the principal medical officer in charge. Since the recent promotion of the last occupant of this position, these duties have been carried out by a senior medical officer transferred for the time from the general hospitals division. The suggestion is now to give this divisional medical officer the rank of senior medical officer (salary £1200–£1600). This proposal being accepted, the designation of chief medical superintendents in the infectious hospitals service will lapse with their present holders. The position of senior medical officer in the general hospitals division remains under consideration. The work in connexion with the medical examination of staff has not turned out exactly as anticipated. In February, 1931, it was decided that a special divisional medical officer should do this work, enlisting as required the services of consultants and specialists, in particular on the medico-legal side. At that time it was estimated that the number of cases to be dealt with would be in the neighbourhood of 4000 a year. The actual numbers have, however, proved to be far in excess of this estimate—namely, 1931 (10½ months), 6540; 1932, 9009; 1933, 8569; 1934 (estimated), 9250; the numbers not showing any decline in spite of the transfer of the Council's tramways to the Transport Board. It has, however, not been found necessary to call upon the services of consultants and specialists to any great extent; experience has proved the impracticability of dividing up the work in the manner originally intended. That being so, the position of divisional medical officer is to be now upgraded to that of principal assistant medical officer (£950–£50–£1250). In connexion with the accelerated programme of slum clearance the temporary employment of two divisional medical officers in the public health department was authorised. At present one of these positions is being filled by the appointment of Dr. A. L. Banks, at present full-time assistant medical officer at the G.P.O.

Maternal Mortality

Replying on Dec. 11th to a deputation from the Maternal Mortality Committee (see THE LANCET, Nov. 10th, p. 1084) which included Lady Barrett, the Minister of Health said there was no evidence showing close relation between malnutrition and a high maternal mortality-rate. Of the actual deaths examined, at least one-half occurred among well-to-do people and it was significant that the maternal death-rate for 1933 in such a depressed area as Durham was no higher than the death-rate in the relatively prosperous county of Middlesex. Nevertheless the conditions in the depressed areas were undoubtedly such as to give rise to anxiety, and the position was receiving the close attention of the administration. In particular, local authorities had been urged to make, in appropriate cases, full use of their powers to supply milk and other foods to expectant and nursing mothers. The Government, he said, had given impetus to the development of the maternity services by local authorities and there would be no relaxation until the maternal mortality-rate had been reduced. Particular attention was being directed to:—

(1) improving the antenatal service;
(2) ensuring that the services of a trained midwife are available for all confinements;
(3) securing the provision of maternity beds for complicated cases and for patients with unsuitable home conditions, such beds to be associated where practicable with general hospitals, preferably in small units readily supervised, and for which prompt specialist services for serious cases may be made available;
(4) providing facilities for the adequate isolation and separate nursing of cases of puerperal sepsis; and
(5) obtaining the services of a consultant for doctors needing assistance in difficult or complicated cases.

Special inquiries, Sir Hilton added, were about to be made in those areas in which the maternal mortality-rate had been found to be abnormally high.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 8TH, 1934

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 3747; diphtheria, 1929; enteric fever, 12; acute pneumonia (primary or influenzal), 1082; puerperal fever, 37; puerperal pyrexia, 115; cerebro-spinal fever, 15; acute poliomyelitis, 14; acute polio-encephalitis, 2; encephalitis lethargica, 5; dysentery, 22; ophthalmia neonatorum, 90. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. 17th–18th was as follows: Small-pox, 0 under treatment, 0 under observation; scarlet fever, 1763; diphtheria, 2200; measles, 188; whooping-cough, 248; puerperal fever, 22 mothers (plus 10 babies); encephalitis lethargica, 267; poliomyelitis, 10; "other diseases," 329. At St. Margaret's Hospital there were 20 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox, 1 (1) from enteric fever, 5 (0) from measles, 8 (0) from scarlet fever, 12 (5) from whooping-cough, 51 (8) from diphtheria, 41 (10) from diarrhœa and enteritis under two years, and 56 (17) from influenza. The figures in parentheses are those for London itself.

Deaths attributed to influenza are nearly stationary, the total for the last few weeks (working backwards) being 56, 64, 61, 39, 46, 28. This week they were distributed over 30 great towns, Manchester and Birmingham each reporting 3, Brighton, Gateshead, Liverpool, Salford, Bristol, and Leicester each 2. There were 6 deaths from diphtheria at Liverpool, 4 at Birmingham, 3 at Oldham.

The number of stillbirths notified during the week was 215 (corresponding to a rate of 35 per 1000 total births), including 35 in London.

THE INFANTS HOSPITAL.—On Dec. 11th the Princess Royal formally opened the new in-patients' block, the new nurses' home, and the remodelled wards in the original building at the Infants Hospital, Vincent-square, London. Open-air balconies are the chief feature of the design and extend along the south, west, and north elevations, while every ward has direct access to a balcony. A clinic for deaf babies is to be started. The cost of the reconstructions amounts to about £150,000.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Registration and Regulation of Osteopaths Bill

IN the House of Lords on Dec. 11th, Viscount ELIBANK moved the second reading of the Registration and Regulation of Osteopaths Bill. He said that the purpose of the Bill was a very simple one—namely, to establish by Act of Parliament a Board armed with the necessary powers and authority to compile a register of osteopaths and to regulate the practice of this new system of therapeutics in this country. The main object was to impose upon the practitioners of this system a prescribed standard of professional training and technical competence which would debar unqualified and incompetent persons from setting themselves up as they now did as osteopaths claiming to be able to practise a system of manipulative therapeutics outside the ambit of the Medical Acts.

He appealed to Lord Moynihan, Lord Dawson, and others, who were rightly concerned to maintain the high standard of medical education attained in this country, who were rightly jealous of the high responsibilities imposed upon the medical profession by law, and who properly realised the necessity for preventing impostors and humbugs practising as doctors, to examine this Bill entirely from the ethical point of view of bringing the osteopath's profession in this country into conformity with the standards laid down for the medical profession. In this Bill there was nothing which would enable an osteopath to obtain admission to the Medical Register. Osteopaths were not asking for admission into the medical profession; they were asking that they should be admitted to an osteopaths' register; that only qualified osteopaths should be registered; that the qualifications for registration should in their own particular way be as strict, as definite, and as onerous as those which admitted to the Medical Register; that no osteopath should be allowed to practise unless he was on the register of osteopaths; and that those who were admitted to the register as properly qualified should be allowed to claim the qualifications which they possessed, and to use such titles and descriptions as would identify them as osteopathic practitioners and nothing else.

The Bill was designed to do what was already done in other countries. In the United States, where osteopathy originated more than half a century ago, practically all the States of the Union had legislated on these lines. Since 1930 in all the 48 States and territories and in most of the provinces of Canada the osteopathic profession was regulated and controlled by boards similar to that which this Bill proposed to set up. Under the protection of these laws osteopathic colleges and schools, sanatoria, hospitals, and clinics had developed, and the science was being furthered and the technique perfected in a very impressive manner. New forms of specialised treatment were being evolved by the osteopaths, and their claim to be able successfully to diagnose and treat disease was not now seriously contested in the United States of America. That was also the case in Canada. The proposed Board would include independent persons with scientific and technical qualifications, who would be selected by the Ministry of Health. One of these independent persons would be appointed by the Privy Council, and would be chairman of the Board. The others selected by the Ministry of Health, and not being members of the ordinary medical profession, would be persons of recognised scientific status who would along with the representatives of organisations of osteopaths in this country lay down the subjects of study and the length of training which would qualify for registration. In the event of the Bill receiving a second reading he would ask the House to agree to the appointment of a Select Committee to examine this subject carefully and to advise their Lordships upon it.

Lord Moynihan's motion for rejection was negatived by 37 votes to 20, and the Bill was read a second time and referred to a Select Committee with leave to hear counsel. (The debate is referred to in a leading article on p. 1399.)

Indian Constitutional Reforms and Health Services

On Dec. 11th in the House of Commons the debate was resumed on the motion that the House accepts the recommendation of the Joint Committee on Indian Constitutional Reform as the basis for the revision of the Indian constitution, and considers it expedient that a Bill should be introduced on the general lines of the report.

The Duchess of ATHOLL called attention to the deterioration in the work of the local authorities in India, and emphasised the prejudicial affect on the welfare of the masses. She said that an ex-director of public health had stated in a recent review that many local authorities had brought to an end the extension of schemes of drainage and water-supply which had been steadily increasing before the constitutional reforms of 1921. In many cases, she said, they had got into such financial difficulties that they had not even been able to maintain the services of the kind which had been provided before. The noble lady asked the House to imagine what danger that meant to public health in a country such as India, with all its many epidemic diseases. An inspector-general of civil hospitals told the Joint Committee of grave deterioration in the health services due not merely to the deficiencies of local authorities, but to the administration of the Minister himself and his constant interference in medical appointments. Most unsuitable men had also been appointed to other important medical posts, such as professorships, which must have had very serious effects on the welfare of the Indian people. A professor of physiology, the Joint Committee were told, was appointed who admitted to the Principal of the Medical College that he had never lectured, never demonstrated, and had done no physiology since his student days. An ex-inspector-general of hospitals spoke of the thousands of eyes that were blinded every year in India through operations for cataract performed by unqualified quacks, trained in institutions which were now receiving grants from public funds owing to the political pressure put on Ministers by Provincial Councils, which they had not been able to withstand. When they learned of facts such as those was it not inevitable that members should feel that the greatest caution was necessary in giving further constitutional powers?

Miss RATHBONE said that the record of Indian Government, both Central and Provincial, in the matter of women's interests had not been such that those who had those interests at heart could happily leave the initiative for further advances in their hands. She asked the Secretary of State for India what the position of the women's medical service would be under the new arrangements. Was it not time that this service should be given a more stable and recognised position, possibly by setting it up as a definite branch of the Indian Medical Service? Since the women's service was already subsidised by the Government, the change would not necessarily cost more money.

Dartmoor Convict's Suicide and Flogging

On the motion for the adjournment of the House of Commons on Dec. 11th, Mr. Bernays raised the question of the advisability of an inquiry into the punishment of flogging, which arose out of the case of a Dartmoor convict, Collins, who was condemned to 12 strokes with the "cat" and three years' penal servitude for an act of violence done while trying to escape from Dartmoor prison, and who committed suicide in prison on Nov. 29th.

Mr. BERNAYS said that in a letter Collins left in his cell he said that he was being slowly murdered, and every night he was lashed with the cat. His head was awful with all the worry and he thought it might go back on him any minute. He tried to hide what was really the matter with him from the doctor and did not tell him all. Mr. Bernays added that he was sure the officials at Dartmoor were humane men and that nothing they did caused this terrible suffering. He asked for an inquiry to discover whether flogging was really a deterrent, whether it was not too brutally administered, and whether, if it was really necessary in the last resort, its use ought not to be more seriously restricted than at present. He called the Home Secretary's attention to a letter written to the *Daily Telegraph* on Dec. 7th by a medical officer in a convict prison. That gentleman gave his name, and wrote: "*Apropos* of the question asked in the House yesterday regarding the suicide in Dartmoor of a convict sentenced to be flogged, may I, as one whose painful—and terribly painful—duty it has been to witness this ghastly form of punishment, protest against its continuance? Dreadful as it is, it has but one effect—and that is on the mind and body of the prisoner. It does not act as a deterrent to others. But the worst part of it is that it is a brutal application of the law, as well as the terrible knouts, that cut into the flesh of the receiver. I shall not forget in a hurry the look on the face of two people when I last saw this punishment inflicted—i.e., the flogger and the flogged. Both were utterly demoralised, temporarily, and the savage brute came out in both of them. Let us see an end of this ancient relic of brutal days."

Mr. I. FOOT said that all the evidence showed that the officials of the prison did all in their power in the case, and there certainly was no criticism of the medical officer.

Mr. O'CONNOR said it was easy to work up hysteria. When he read the letter from the prison doctor which Mr. Bernays had quoted, he thought that the doctor was making an unfair reflection on the men who had to perform the duty of flogging a prisoner. He was sure, however, that the people who performed those sentences were scrupulously impersonal.

Sir JOHN GILMOUR, Home Secretary, pointed out that on the one hand this form of punishment was ordered by the Court after very careful consideration, and on the other hand it could only take place after an inquiry by magistrates on the spot in the prison. It was subsequently brought to the Home Secretary, and it was on every occasion most carefully and meticulously supervised by the medical officer. If there was any doubt in the mind of the medical officer, his view was paramount in the matter and, even when the punishment was being carried out, if there was the slightest sign that would lead the medical officer to suppose that any serious and permanent injury was likely to be inflicted on the individual, on his word that punishment ceased and was not continued. The punishment was carried out with the greatest care and circumspection, and he trusted that the House would not ask for an inquiry of this kind.

Health Conditions in Merchant Ships

On Dec. 14th in the House of Commons Dr. BURGIN, Parliamentary Secretary to the Board of Trade, moved the second reading of the British Shipping (Assistance) Bill which proposes to give a subsidy to tramp shipping.

Dr. ADDISON moved the rejection of the Bill on the ground that it subsidised private interests and did not include measures to ensure the payment of fair wages and good working conditions for those employed on board ships. He said that the defective accommodation provided on some British merchant ships had its effect on the health of the crews. Some very startling figures emerged from the examination of the records of the health of merchant seamen. He had spent a little time looking into the mortality statistics relating to the mercantile marine issued by the Board of Trade in 1932. The number of seamen who died in that year was 3166, and of these only 642 were occupied seamen. That seemed a relatively small proportion but when they looked a little further into the matter it turned out that no less than 625 men of those not returned as occupied died within 12 months of leaving the service and 295 died within three months of retirement. In other words, they left to die. They found that 20 per cent. of the total deaths were of men who died within a year of leaving the service. There was a staggering record of mortality from tuberculosis and other respiratory diseases No less than 611 out of 3000 died from those causes, and, of course, that was associated with bad accommodation in the ships. When Parliament was granting a subsidy of £10,000,000 for the building of more ships they were entitled to secure that men should not be subjected to the sort of accommodation which produced those results.

Sir HERBERT CAYZER said he fully agreed with Dr. Addison that the personnel of the merchant service was of vital importance to this country. It should be recognised generally that shipowners took a great pride and interest in their personnel. There might be a few black sheep among them, as there were in every industry, but taking them as a whole British shipowners were keenly interested in the welfare of their crews and personnel.

Mr. ARTHUR GREENWOOD said he had a case with sworn affidavits of a fireman on a British ship passed by the Shipping Federation's medical officer as being fit for service as a fireman going out to West Africa, not liking it too much, because he was not really feeling too well. Because that man took some objection he was disrated by the chief engineer and the skipper of the boat to the position of an ordinary seaman. That man was found dead in the stokehold, very largely, he suspected from various sworn statements, not merely because of his own physical condition, but because of the condition of the boat itself. Such conditions of employment were intolerable. The Minister of Health had said that the Government could not pay for rotten cottages any more than it could pay for rotten meat. He (Mr. Greenwood) did not see why Parliament should subsidise the slums of the sea. There were no worse conditions afloat than in tramp shipping.

Mr. DICKIE said that that was definitely untrue. He was the only marine engineer in that House who held a first class Board of Trade certificate. He had been through this particular mill, and he told Mr. Greenwood that it was a foul thing to libel the conditions under which British seamen worked. They were the best conditions in the whole civilised world and were infinitely better than they had been. A tremendous improvement had taken place during the last 20 years.

Mr. GREENWOOD said that personally he did not care whether the conditions in British ships were better than those in the ships of other countries; his point was that they had no more right in a subsidised industry to compel people to live in the slums of the sea than to compel them to live in slums on land.

THE GOVERNMENT'S REPLY

Mr. RUNCIMAN, President of the Board of Trade, replying to the debate, said that Mr. Greenwood had drawn a picture of the British mercantile marine that no well-informed person would recognise. (Cheers.) Dr. Addison had referred to the health conditions in the mercantile marine. He did not know from what report Dr. Addison was quoting but he (Mr. Runciman) had the latest volume of statistics relative to mortality in the mercantile marine. He would quote the salient passages from that report:—

"A crude death-rate has been calculated and for ages 20 and over is found to be lower than that for the general population, but the results cannot be regarded (*a*) as reliable, owing to the difficulty of estimating a population figure for the mercantile marine at a date

about nine years after the preceding Census of Population, or (*b*) as furnishing an indication that the mercantile marine is a perfectly healthy occupation since the results are affected to a very considerable extent by the age distribution of merchant seamen which is so different from that of the general population."

Paragraph (7) said :—

"The conclusion reached is that, apart from drowning and injury, service in the mercantile marine is no more inimical to life and health than are many occupations ashore frequently regarded as healthful."

A further paragraph said :—

"The question whether a period can be fixed so that, if all deaths of seamen occurring beyond this period after leaving the sea are excluded from the statistics of the occupation, the result represents the mortality due to sea service, has been examined, but it has been thought advisable to exclude any mortality record solely on the ground of the time elapsed since the last sea employment of the deceased, each case requiring to be decided on its merits."

Dr. ADDISON said the whole of his point was that a number of cases—630, he thought—of seamen who died within 12 months of leaving the service were excluded, and that they should be included. If those numbers were included it meant that large numbers of men retired from the service to die.

Mr. RUNCIMAN said it would have been fairer to the House if Dr. Addison had read paragraph 7 as well. The result of the arrangements which the Government were making under this Bill would lend to a general screwing up of the conditions under which the mercantile marine was administered.

The motion for rejection was negatived by 384 votes to 121 and the Bill was then read a second time.

HOUSE OF COMMONS

WEDNESDAY, DEC. 12TH

Pedestrians and Road Accidents

Sir FRANCIS FREMANTLE asked the Minister of Transport the number of deaths from road accidents during 1933 due to pedestrians stepping from the kerb into the roadway; and whether he would take action to inculcate the rule of the pavement to keep to the left so as to face on-coming traffic.—Mr. HORE-BELISHA replied: The analysis of fatal road accidents in 1933 shows that of the 3517 pedestrians who were killed, 379 deaths were attributed to stepping from a kerb or refuge without looking. This was assigned as the sole or main cause of the accident in 337 of these cases, and as a contributory cause in the remainder. I have remitted the question whether or not pedestrians should be advised to keep to their left on the pavement, so as to face on-coming traffic, to the Committee on Road Safety for their report.

Vice-Admiral CAMPBELL: Will the Minister consider putting handrails round the outer edge of the pavement in dangerous streets?

Mr. HORE-BELISHA: Yes, Sir, that matter is being considered.

Mysterious Poisoning of Schoolgirls in Tanganyika

Mr. PALING asked the Secretary of State for the Colonies whether he could give any information to the House as to the circumstances in which a number of native schoolgirls in Tanganyika met their deaths as a result of drinking a poisonous liquid by mistake; and what steps had been taken to avoid the possibility of any such occurrence in the future.—Sir PHILIP CUNLIFFE-LISTER replied: I deeply regret this tragic occurrence. I understand that on the morning of Oct. 25th doses of what was thought to be shark oil (which had been used with success at hospitals in Tanganyika as a substitute for cod-liver oil) were issued, on the instructions of the headmistress (herself a doctor) to the pupils at Malangali girls' school. It has now been established, however, that the liquid used was not shark oil, but some form of disinfectant resembling it in appearance but containing arsenic, with the result that all who had taken doses (including the headmistress herself) became ill, and 35 of the girls died. It is not yet definitely known how the mistake occurred. Further investigations are proceeding, and I will communicate to the hon. Member any further information I receive. As regards the second part of the question, orders were issued immediately after the occurrence to every Government station, and to all hospitals, tribal dressing stations, dispensaries, and mission stations to the effect that the use of shark's oil must be discontinued at once until after the matter had been investigated. The question of what further action may be necessary must naturally depend on the result of the investigation.

Irish Free State Hospitals Sweepstakes

Mr. MCGOVERN asked the Home Secretary the amount of money for the Irish Free State hospitals sweepstakes which had been confiscated or returned after the opening of correspondence for each draw since they were initiated; and the number of prosecutions in connexion with each draw.—Sir J. GILMOUR replied: No money has been confiscated and it would not be in the public interest to give information as to the amount of the money returned. As regards the second part of the question, I regret that the information is not available.

Thefts of Doctors' Bags

Mr. THORNE asked the Home Secretary whether he was aware of the growing increase of thefts from unattended cars of doctors' bags containing drugs; and if he intended taking any action in the matter.—Sir J. GILMOUR replied: I am aware that there have been a few such thefts, but I have no grounds for thinking that they are other than ordinary cases of petty larceny, and I do not think that there is any action I can usefully take in the matter. The remedy is for medical practitioners and others who have drugs in their possession to take reasonable steps to avoid the risk of their being stolen, and I hope the publicity now given to the matter will lead to greater care being taken.

THURSDAY, DEC. 13TH

Health Conditions in Sunderland and Seaham

Mr. STOREY asked the Minister of Health whether he had given consideration to information from a responsible source on the state of the public health in Sunderland and Seaham which had been conveyed to him in a communication, and what steps he proposed to take in the matter.—Sir HILTON YOUNG replied: Yes, Sir. The statements in question, which were contained in a letter signed by Dr. G. F. Walker, of Sunderland, that has appeared in the press, require investigation. My noble friend, the President of the Board of Education, and I have accordingly jointly instructed qualified officers of the Board of Education and Ministry of Health forthwith to visit this area for that purpose. I have also communicated with the local health authorities concerned.

Mr. STOREY: Will my right hon. friend say whether the results of those inquiries will be made public?

Sir HILTON YOUNG: I would rather consider the statement that I get from the officers in the locality before I decide.

Housing (Scotland) Bill

Mr. NEIL MACLEAN asked the Prime Minister when the Housing Bill for Scotland would be introduced.—Mr. BALDWIN (Lord President of the Council) replied: It is hoped that the Housing (Scotland) Bill will be circulated during the Christmas recess in ample time for its consideration before a date is fixed for the second reading.

Working Days Lost by Sickness

Mr. WEST asked the Minister of Health how many days' work were lost by insured persons owing to sickness in 1932 and in 1933.—Sir HILTON YOUNG replied: It is estimated that the sum expended on sickness and disablement benefits by approved societies in England and Wales in the years 1932 and 1933 represented 164,000,000 and 174,000,000 working days respectively.

OBITUARY

CHARLES JOHN JACOMB-HOOD, M.R.C.S. Eng., L.S.A.

Dr. Jacomb-Hood, whose sudden death occurred on Nov. 28th, was one of the best-known medical practitioners in Brighton. He received his medical education at King's College, London, and after obtaining the English double diplomas he served as house surgeon and assistant surgical registrar at King's College Hospital. He was later house physician at Queen Charlotte's Hospital, and then started in practice some 40 years ago in Brighton. In Hove and Brighton he was a well-known figure. He was honorary surgeon to the Hospital for Women and to the Brighton and Hove Dispensary, and senior medical officer to the Mutual Provident Society; he was Colonel R.A.M.C. (T.), and during the war commanded the local territorial unit with medical charge of the camp at Shoreham. He was chairman of the Brighton Insurance Committee until his resignation this year.

Dr. Jacomb-Hood will be missed by a large number of patients and friends who held him in singularly close regard. He was a bachelor.

WILLIAM MORRISON MILNE, M.B., C.M., F.R.C.S. Edin.

Dr. William Morrison Milne, who died on Nov. 24th in Edinburgh, was for 10 years a member of the teaching profession before he turned his attention to medicine. Born in 1861 he graduated as M.A. in the University of Aberdeen and was in succession headmaster at Latheron, Caithness, and Alness, Ross-shire, before proceeding to Edinburgh for his medical training. He graduated as M.B., C.M. Edin. in 1896 and held many clinical posts at the Royal Infirmary, Edinburgh, while he was also house surgeon at the Leith Hospital. He took the diploma of F.R.C.S. Edin. in 1901 and manifested a distinct leaning towards the surgical side of his duties, during his 40 years as a general practitioner in the south of Edinburgh. Dr. Milne is survived by his widow and two sons.

MEDICAL NEWS

Royal College of Surgeons of England

A meeting of the Council was held on Dec. 13th, with Sir Holburt Waring, the president, in the chair. Mr. R. St. Leger Brockman, surgeon to the Royal Infirmary, Sheffield, was elected a member of the court of examiners in the vacancy caused by the retirement of Prof. Ernest W. Hey Groves. Dr. A. J. E. Cave, senior demonstrator in anatomy at University College, London, was appointed assistant conservator of the museum.

Diplomas of fellowship were granted to the following candidates:—

Arthur David William Jones, M.B. Lond., George Edward Graves Peirce, M.B. Lond., Arthur Norman Jones, M.B. Liverp., Bijeta Chaudhuri, M.B. Bombay, John Arthur Pocock, M.B. Camb., John Charles Nicholson, B.M. Oxon., Richard Harrington Franklin, M.B. Lond., Muriel Hilary Eileen Long, M.B. Lond., John Stanley Batchelor, L.R.C.P. Lond., Johan Wilhelm Sture Hjalmarson Lindahl, L.R.C.P. Lond., John Scholefield, M.B. Leeds, Pravat Chandra Sanyal, M.B. Calcutta, Allen John Bridson Goldsmith, M.B. Lond, Henry Heber Langston, M.B. Lond., Guilluame Tom Du Toit, L.R.C.P. Lond., Frederick John Sambrook Gowar, M.B. Lond., Alan Francis Goode, M.B. Birm., Frank Radcliffe, M.B. Camb., Stephen Creighton Suggit, M.B. Lond., William Gordon Gill, M.B. Camb., Hugh Morgan Williams, M.B. Lond., Sharad Chandra Misra, M.B. Lucknow, John Allison Strachan Marr, M.B. Cape, Gopal Krishnaya Mulki, M.B. Bombay, George Qvist, M.B. Lond., James Hardman, M.B. Birm., Shri Rameshwer, M.B. Lucknow, James Kennedy Elliott, M.B. Edin., Alexander William Badenoch, M.D. Aberd., Joseph John Brownlee, M.B. N.Z., William Henry Graham, M.B. Glasg., William Robert Henderson, M.B. Edin., Rustom Jamshedji Katrak, M.B. Bombay, Hilda Margaret Linford, M.D. Manch., Walter Stafford McGrath, M.B. Sydney, John Archibald McLauchlan, M.B. Edin., George Henderson Macnab, M.B. Edin., Wilfred Henry Bertram Magauran, M.D. N.U.I., Juan Antonio Martinez, M.B. Liverp., Ramaswamy Nagendran, M.B. Madras, Herbert Kenneth Pacey, M.B. N.Z., Eustace Alwynne Rowlands, M.B. Melb., Harley Irwin Turnbull, M.B. Sydney.

A diploma of membership was granted to Mr. Garthowen Williams (Cambridge and St. George's).

At the primary examination for the fellowship held recently, 198 candidates presented themselves, of whom 67 were approved and 131 were rejected. The following are the names and medical schools of the successful candidates:—

B. S. S. Acharya, St. Bart.'s and Middlesex; J. R. Ascott, St. Thomas's; J. C. Balzer, M.B. Sydney, Middlesex; W. C. Barber, M.B. Camb., Manch. and Middlesex; S. E. Birdsall, B.Ch. Camb., St. Bart.'s; A. B. Birt, St. Thomas's; G. Blackburn, Camb. and St. Bart.'s; Katharine M. H. Branson, Roy. Free; Doris B. Brown, M.B. Leeds, King's Coll.; J. F. H. Bulman, Camb. and St. Thomas's; A. Cohen, Univ. Coll.; D. H. Craig, M.B. Belf., Univ. Coll.; L. M. Crooks, M.B. Liverp., Middlesex; K. R. Cussen, M.B. Melb., Middlesex; V. R. Damle, M.B. Bombay, Middlesex; Gladys H. Dodds, M.D. Edin., Univ. Coll.; W. A. D. Drummond, M.R.C.S., St. Andrew's and Guy's; E. M. Evans, Middlesex; G. Flavell, New Zealand and St. Bart.'s; I. G. L. Ford, M.B. Dubl., Middlesex; R. T. C. Fraser, M.B. N.Z., Middlesex; S. R. Gerstman, M.B. Melb., Univ. Coll.; L. W. Gleadell, M.B. Melb., Guy's; C. H. Gray, M.B. Manch., Middlesex; R. B. Grey, M.B. N.Z., Middlesex and Guy's; E. J. Grieve, M.B. Melb., Middlesex and Univ. Coll.; Gladys Hill, M.B. Lond., Roy. Free; R. N. Howard, M.D. Melb., Univ. Coll.; H. C. Hugh, M.B. Lond., St. Bart.'s and Middlesex; J. H. Hughes, M.D. Liverp.; N. E. James, London; R. T. Johnson, Camb. and St. Bart.'s; W. G. Johnston, M.D. Toronto, Univ. Coll.; A. S. Kerr, M.B. Liverp.; P. Kidd, Camb. and London; J. S. McConnachie, Aberd. and St. Mary's; A. C. McEachern, M.B. Adelaide, St. Mary's and Middlesex; D. H. Mackay, M.B. Manch.; A. D. McLachlin, Western Univ. and Oxford; R. K. Magee, M.D. Toronto, Middlesex; I. Mehrez, M.B. Cairo, London; P. S. Meyrick, Univ. Coll.; S. A. Mian, M.R.C.S., Punjab and Middlesex; P. M. Moffatt, M.D. Lond., Guy's; G. A. Myers, M.B. N.Z., Middlesex and Univ. Coll.; W. A. B. Nicholson, M.B. Manch.; L. C. Oliver, M.R.C.S., Guy's and King's Coll.; J. O'Shea, M.D. Dubl., Middlesex and London; R. V. Payne, M.B., Camb. and Guy's; L. J. T. Pellew, M.B. Adelaide, Middlesex; J. S. M. Pringle, M.B. Camb. and Dublin; A. Rakoff, M.B. Dub., St. Mary's; F. F. Rundle, M.B. Sydney; C. P. Sames, St. Mary's; J. L. Scholes, M.B. Melb.; H. S. Shucksmith, M.B. Leeds, King's Coll.; E. R. Smith, St. Thomas's; S. L. Spencer, M.B. Sydney, Middlesex; B. W. Stevens, M.D. Toronto, Middlesex; G. S. Thompson, M.B. Sydney, Middlesex; N. Vere-Hodge, Camb. and Middlesex; H. K. Vernon, M.B. Durh., Middlesex; Lilian H. Walter, Roy. Free; W. B. Waterfall, Camb. and London; L. L. Whytehead, Oxford and Middlesex; G. H. Wooler, Camb. and London; R. G. Worcester, M.D. Melb., Univ. Coll. and Middlesex.

The secretary reported that at the primary fellowship examination, held in Melbourne recently, 45 candidates were examined, of whom 22 were approved.

University of London

At recent examinations the following candidates were successful:—

THIRD EXAMINATION FOR M.B., B.S.

Honours.—Eleazar Galinsky (*b*, *c*) and A. G. Hounslow (*a*, *c*, *e*), Univ. Coll. Hosp.; Nora L. Keevil (*c*), Roy. Free Hosp.; M. J. F. McArdle (*a*), Guy's Hosp.; and S. J. L. Taylor (*c*), St. Thomas's Hosp.

(*a*) *Distinguished in Medicine.* (*b*) *Distinguished in Pathology.* (*c*) *Distinguished in Forensic Medicine and Hygiene.* (*e*) *Distinguished in Obstetrics and Gynæcology.*

Pass.—S. H. Alavi, St. Thomas's Hosp.; I. G. Anderson, King's Coll. Hosp.; Alberta I. Andrews and Elsie Armer, Roy. Free Hosp.; Margaret D. Baber and V. H. Barnett, Univ. Coll. Hosp.; D. M. Blomfield, St. Bart.'s Hosp.; H. B. Boucher, St. Thomas's Hosp.; C. F. R. Briggs, Univ. Coll. Hosp.; J. A. Brocklebank, Guy's Hosp.; E. N. Brockway, St. Thomas's Hosp.; W. M. Capper, St. Bart.'s Hosp.; B. S. Carter, St. Thomas's Hosp.; W. H. Cartwright, St. Bart.'s Hosp.; Jean M. Cass, Roy. Free Hosp.; S. G. Clayton, King's Coll. Hosp.; Gladys E. Clyne, Roy. Free Hosp.; L. W. Davies, St. Thomas's Hosp.; G. W. Duncan and K. C. Eden, Univ. Coll. Hosp.; E. D. Falconer and W. T. J. Fowler, Guy's Hosp.; Joan I. Franklin-Adams, Roy. Free Hosp.; D. J. Gilbert, King's Coll. Hosp.; F. R. Glover, B. S. Grant, and Louis Greenfield, London Hosp.; John Greenhalgh, Guy's Hosp.; T. F. R. Griffin, St. Mary's Hosp.; J. C. Harvey, St. George's Hosp.; F. S. M. Heggs and Anthony Hollingsworth, St. Thomas's Hosp.; E. I. Jones, King's Coll. Hosp.; F. A. Jones, St. Bart.'s Hosp.; G. F. Jones, St. Mary's Hosp.; Alice M. Kaye, King's Coll. Hosp.; J. H. Kelligren, Univ. Coll. Hosp.; F. R. Kilpatrick, Guy's Hosp.; J. R. Kingdon, St. Bart.'s Hosp.; C. E. Langley, London Hosp.; Margaret M. C. Louden, Roy. Free Hosp.; Brian McArdle,

Guy's Hosp.; G. G. Macdonald, Univ. Coll. Hosp.; A. L. McFarlane, King's Coll. Hosp.; W. M. Macleod, St. Thomas's Hosp.; C. F. Mayo-Smith, St. George's Hosp.; C. B. Miller, King's Coll. Hosp.; Barbara G. Morton, Roy. Free Hosp.; J. A. W. Musson, Middlesex Hosp.; R. H. Purnell, St. Bart.'s Hosp.; A. M. Rackow, King's Coll. Hosp.; D. C. Reavell, A. T. Roden, and B. F. B. Russell, St. Bart.'s Hosp.; K. G. Seager, St. Mary's Hosp.; Catherine L. Simmons, Roy. Free Hosp.; M. C. L. Smith, St. Bart.'s Hosp.; La-iad Soblye, Guy's Hosp.; Kenneth Soddy, Univ. Coll. Hosp.; E. J. Somerset, King's Coll. Hosp.; W. H. C. Spooner, St. Mary's Hosp.; K. F. Stephens, St. Bart.'s Hosp.; G. L. Timms, St. Thomas's Hosp.; T. G. Tregaskis, St. Bart.'s Hosp.; R. J. Vakil and M. E. Wigfield, St. Thomas's Hosp.; and E. Ll. Williams and Betty M. Zeal, Univ. Coll. Hosp.

The following candidates have passed in one of the two groups of subjects.

Group I.—Mary Barber, Roy. Free Hosp.; R. M. Clarke, Middlesex Hosp.; G. B. Davis, King's Coll. Hosp.; H. A. Eason, London Hosp.; J. F. A. Forster, Guy's Hosp.; P. G. F. Harvey, St. Bart.'s Hosp.; I. H. Jenkins, St. Thomas's Hosp.; A. E. Jones, Guy's Hosp.; A. C. Kanaar, St. Bart.'s Hosp.; Abraham Lesnick, Univ. Coll. Hosp.; J. B. H. McArthur, Guy's Hosp.; Tudor Miles, St. Thomas's Hosp.; Arnold Moore, Univ. Coll. Hosp.; Elizabeth C. Morris, Roy. Free Hosp.; H. S. Pasmore and A. W. Probert, Univ. Coll. Hosp.; J. G. Sheldon, Univ. of Liverp.; and J. P. Thyne, King's Coll. Hosp.

Group II.—Marjorie Bolton, Roy. Free Hosp.; P. R. Boucher, St. Mary's Hosp.; R. B. W. A. Cole, Univ. of Durham; V. H. J. Davies, Charing Cross Hosp.; H. J. Fenn, King's Coll. Hosp.; Barbara J. Fisk, Roy. Free Hosp.; E. A. Hardy, Westminster Hosp.; O. S. Heyns, Univ. Coll. Hosp.; D. M. Jones, St. Bart.'s Hosp.; J. G. Jones, King's Coll. Hosp.; J. A. Lewis, St. George's Hosp.; M. J. Lindsey, Guy's Hosp.; J. R. M. Martin, St. Bart.'s Hosp.; R. B. Morton, St. Thomas's Hosp.; H. N. Perkins and J. H. Playne, St. Mary's Hosp.; Irene H. Rogers, King's Coll. Hosp.; Randall Sollenberger, St. Mary's Hosp.; W. J. Stokes and F. G. St. Cl. Strange, London Hosp.; and W. H. Summerskill, Guy's Hosp.

University of Bristol

Dr. H. J. Drew Smythe, lecturer in obstetrics in the university, has been appointed to succeed Dr. R. S. S. Statham in the chair of obstetrics.

Dr. Drew Smythe was born at Northampton in 1891 and educated at Taunton School. He studied medicine at the University of Bristol, where he obtained the gold medal of the medical school in 1913, and at the London Hospital. Qualifying in 1913 he served throughout the war in the Royal Army Medical Corps—in which he now holds the Territorial rank of lieut.-colonel—and was awarded the Military Cross. He graduated as M.S. Lond. in 1920, became F.R.C.S. Eng. in the following year, and is a fellow of the British College of Obstetricians and Gynæcologists. He has held honorary appointments both at the Bristol Maternity Hospital and at the Bristol General Hospital, where he is now obstetric physician and gynæcologist. His contributions to medical journals include papers on the treatment of cervical erosion, the management of the normal puerperium, and coli infections of the genital tract.

The council of the university has decided to establish a full-time chair of medicine and, subject to the concurrence of the Bristol General Hospital, the first holder of the chair will be Dr. C. Bruce Perry.

Dr. Bruce Perry graduated at Bristol in 1926, proceeding to the M.D. degree in 1928, when he also became a member of the Royal College of Physicians of London. In 1929 he was awarded the Buckston Browne prize of the Harveian Society of London for an essay on chronic streptococcal illnesses. As Colston research fellow at the university centre of cardiac research he was closely associated with the work of the late Dr. Carey Coombs, some of which he has continued, and his original observations have been mainly concerned with juvenile rheumatism and heart disease. He is at present assistant physician to the Bristol General Hospital, out-patient physician to the Bristol Royal Hospital for Sick Women and Children, and physician to the Winford Orthopædic Hospital.

The following appointments have also been made: Dr. Charles Corfield, lecturer in charge of the department of anæsthetics; Dr. C. E. K. Herapath, clinical dean at the Bristol Royal Infirmary; Dr. L. A. Moore, clinical lecturer in anæsthetics; Mr. R. Gordon Paul, clinical lecturer in surgery; Dr. H. J. Orr-Ewing and Dr. G. E. F. Sutton, clinical lecturers in medicine.

In the final examination for the degrees of M.B., Ch.B., R. A. Mathews has passed with second-class honours.

University of Birmingham

On Dec. 14th the following degrees were conferred:—

M.B., Ch.B.—H. T. D. Bocking, J. D. Cruikshank, Brenda Fife, and R. N. Jones.

University of Sheffield

At a meeting of the university council, held on Dec. 14th, Mr. J. C. Anderson was appointed lecturer in applied anatomy and demonstrator in anatomy; Mr. A. W. Fawcett, lecturer in surgical pathology; and Dr. E. F. Skinner, lecturer in psychology.

University of Manchester

Mr. Philip Godlee has presented to Lister House (the university medical hostel) a silver flagon, formerly the property of the late Lord Lister. It was presented to Lord Lister by his colleagues on the occasion of his appointment as regius professor of surgery at Glasgow in 1860.

University of Edinburgh

On Dec. 14th the following degrees and diplomas were conferred:—

M.D.—K. V. R. Choudari (in absentiâ), R. T. Cooke, J. L. Cowan, **J. S. Faulds, *J. R. Innes, R. Y. Keers, R. M. Macfarlane, *A. C. M'Master, *A. S. Paterson, *Susanne J. Paterson, H. B. Porteous, D. C. Sutton, B. N. V. Wase-Bailey, and *Bryan Williams.

** Highly commended for thesis. * Commended for thesis.

PA.D.—E. B. Hendry and Dorothea M. Mowat.

M.B., B.S.—G. L. Birnie, J. H. Bowie, B. H. Charles, A. O. Coker, S. H. Gibbs, G. R. Gunn, W. S. Harvey, R. M. Hayes, K. I. W. Kleinberg, G. C. E. Laing, Theodore Leontsinis, J. M'N. Lockie, H. H. Lockwood, Ian Macpherson, H. R. Mores, G. B. Petrie, Johanna M. Pienaar, R. E. Prichard, M. A. Rifat, L. V. Roberts, G. G. Robertson, Una R. Roy, H. L. R. Sargant, Felix Schwartz, G. A. Scott, I. M. Scott, G. A. M. Smith, Hugh Watson, and H. K. Wong.

D.R.—A. R. Cowan.

Dr. Edwin Matthew has been appointed to the university chair of clinical medicine in succession to Dr. Edwin Bramwell, who has resigned.

Dr. Matthew graduated as M.A. in 1889 at Aberdeen, but studied medicine at Edinburgh, where he took his M.B. with first-class honours in 1897 and his M.D. with the gold medal in 1908. In 1906 he was elected fellow of the Royal College of Physicians of Edinburgh, and he now holds the appointments of physician to the Royal Infirmary and consulting physician to the Leith Hospital. He was formerly lecturer in the system of medicine at the school of medicine of the Royal Colleges at Edinburgh, and his published papers include many on practical problems of therapeutics.

Medico-Legal Society

Sir Bernard Spilsbury, as president, took the chair at the annual dinner of this society held on Dec. 14th. Speaking to the toast of medicine and law, Mr. Justice Humphreys said that although he knew very little about medicine he had observed that all its forms seemed to have one constituent in common—namely, the drug known as "menth. pip." The law on any subject was what a judge or judges (but not all the judges) had last pronounced it to be. Judges, like doctors, might differ and their clients, like patients, might benefit. Statute law was formerly made by Parliament, but Parliament had abrogated its rights, and to-day the laws were made by people called ministers—which meant a clerk in a back office in Whitehall. In the profession of medicine the community owed a debt especially to research workers and to the general practitioner, who was overworked and underpaid. In his experience practitioners had a knowledge of medicine and surgery fully sufficient to give a jury a clear account of the case and to treat the patient in the way which gave him the greatest possible chance of recovery. The profession of law, he thought, was remarkable for the absence of jealousy among its members. Lord Horder, replying for Medicine, said it would be a delightful thing, for a change, to see a patient who—like Sir Travers Humphreys—knew very little about medicine. The profession as a whole did not seem to be held in the esteem always accorded to doctors as individuals. His own objection to the alternative of osteopathy, however, was that he did not understand how a single therapeutic measure, however useful, could be erected into a system of medicine. The first, second, and third most important thing in practice was diagnosis, and he did not see how there could be any substitute for it and for the pathology which underlay it. If the man who had only one method of treatment was to be raised to the same position as the medical practitioner, what would happen to the public? But the public got the doctors it deserved, and if it wanted to try out one particular method of therapeutics for all diseases—if it liked to call in an osteopath for typhoid fever or ruptured gastric ulcer—well, he would be interested to see the result. Certainly he did not think that doctors should protest too much against an experiment of this kind, for to do so would be to make the osteopath seem like a martyr, and martyrdom was the best form of propaganda. In conclusion, Lord Horder referred to the need for establishing one or more medico-legal institutes

which would strengthen the important link between medicine and law. Judge Earengey, also in reply, commented on the immense volume of literature which now represented the law that every man was supposed to know. The health of the society was proposed by Mr. Justice Swift, who suggested that members should express an opinion on flogging for crimes of violence. He concluded with a warm tribute to the president as expert witness and public servant. Sir Bernard Spilsbury, in reply, referred to the loss suffered by the society in the death of Lord Riddell, and reviewed the work of the year. The membership had now increased to 330. He also spoke of the proposed medico-legal institute, for which the prospects now seemed more hopeful. Mr. E. R. Bolton proposed the health of the guests, and Dr. Robert Hutchison, replying, admitted that, though not a member of the society, he had on his shelf an omnibus volume bearing the words "Detection, Mystery and Horror"; he also confessed to the peculiar taste of liking lawyers. Sir Lancelot Sanderson replied as a representative of law.

Dental Science Prize

The Colyer prize of the Royal Society of Medicine will be awarded in July, 1935. It was founded in June, 1926, to commemorate the 25 years' service of Sir Frank Colyer as hon. curator of the odontological museum, and is given for the best original work in dental science completed during the previous five years by a dental surgeon who has not been qualified for longer than that period. Applications should be sent to the secretary of the society, 1, Wimpole-street, London, W.1, before March 31st.

Epsom College

The fifty-seventh annual meeting of the Old Epsomian Club, when 137 members and guests dined together at the Great Central Hotel, was good evidence of the growing prosperity of Epsom College. The club now numbers over 1100 members. Mr. R. M. Handfield-Jones (O.E.) who presided has been secretary of the club for ten years, and is now retiring from that position and from the council of the college after having devoted a large part of his leisure since leaving school in 1910 to furthering its interest. Mr. J. S. Cotman (O.E.), F.I.C.A., who proposed his health, contrasted the present school—more than 400 boys, a staff of 160, and a weekly expenditure of over £1000—with pre-war conditions. We were hardy people, he said, the early Epsomians, and he gave some telling examples of progress. Mr. Handfield-Jones proposing the toast Floreat Epsomia said that the destiny of Epsom College had been guided by "a very great man" in the person of Sir Raymond Crawfurd and had been fortunate in the Bursar's "brilliant administrative talent," happily diverted from a business career. Speaking freely as an ex-member of the college council, he said that the benevolent side of the foundation *must* be divorced from the school itself. It should be the policy of the council to devise some scheme during the next 12 to 15 years by which a sufficient fund could be built up to supply foundation scholarships, and the headmaster, Rev. A. C. Powell, in replying, fully endorsed his words. After welcoming Lord Leverhulme as the new president of Epsom College Mr. Powell mentioned some athletic records and a remarkable entry of 21 candidates for the first medical examination, of whom all but two were successful. He alluded for the first time to the Lambeth school mission; each week a party of Epsom boys attends this mission club. Dr. A. B. Howitt (O.E.), M.P., proposed The Guests (of whom "of course" the most important were the head prefect and the captain of Rugby football). Lord Leverhulme, in replying, said that his election as president followed shortly on his first attendance at a local race meeting. Prof. T. B. Johnson, dean of Guy's, who also replied in a humorous address, paid tribute to the characteristics of Old Epsomians entering Guy's Hospital. The O.E., he said, was not afraid of hard work, did not shirk responsibility, and could be relied on to carry out what he had to do. An admirable innovation at the dinner was the showing of a film of school life on last Founder's Day. Many past and present members of the college council were present at the dinner, including Dr. Henry Robinson, Sir John Broadbent, Dr. Harold Spitta, Mr. T. Hollis Walker (O.E.), K.C., Mr. A. C. C. Parkinson (O.E.), and Lord Horder.

At the recent meeting of the General Medical Council the names of George Harry Bishop, Horatio Walter James Steen, and Henry Blanchard Walters were restored to the Medical Register.

Royal Lancaster Infirmary

The new wards and X ray departments at this infirmary have been opened by Lady Sefton, and it is announced that they are starting free from debt.

Willesden Maternity Hospital

Sir Comyns Berkeley will open the extension of this hospital at Honeypot-lane, Kingsbury, London, N.W., on Saturday, Dec. 29th, at 3 P.M.

M.O.H.'s of Irish Counties

Last week, under threat of a mandamus from the minister for Local Government and Public Health, the Longford county council agreed to refer the appointment to the commission. Leitrim, however, remains obdurate.

Appointments

FREWER, E. G., M.B. Camb., has been appointed Assistant Resident Medical Officer to the City of London Maternity Hospital.

GILBERT, B., M.B. Lond., F.R.C.S. Eng., House Surgeon to the Chelsea Hospital for Women.

GRIERSON, A. M. M., M.D. Edin., D.P.H., Assistant Medical Officer of Health (Housing Act, 1930) to the City of Manchester.

MARSHALL, F. N., M.D. Manch., Assistant Medical Officer of Health to the City of Manchester.

MARSHALL, GEOFFREY, O.B.E., M.D., F.R.C.P. Lond., Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

OGLE, WILLIAM, M.R.C.S. Eng., Senior Resident Medical Officer to the City of London Maternity Hospital.

Westminster Hospital.—The following appointments are announced:—

LEE, E. S., M.B. Lond., F.R.C.S. Eng., Surgical Registrar;
HEATH, NEWTON, M.A. Oxon., M.R.C.S. Eng., Surgical Registrar; and
MACNAB, G. H., M.B. Edin., F.R.C.S. Eng., Surgical Registrar.

Certifying Surgeon under the Factory and Workshop Acts: Dr. W. G. F. O. Morris (Lynton, Devon).

Births, Marriages, and Deaths

BIRTHS

FAIRLEY.—On Dec. 5th, at Four Oaks, Warwickshire, the wife of Dr. James Fairley, of a daughter.

FORREST.—On Dec. 11th, at Ferndale, Torquay, the wife of Devereux Forrest, M.D., M.R.C.P., of a daughter.

GOSSET.—On Dec. 8th, at Cliff-avenue, Margate, the wife of Dr. A. C. V. Gosset, of a daughter.

HALL-SMITH.—On Dec. 13th, at County Gates, Bournemouth W., the wife of G. W. Hall-Smith, M.B. Camb., of a daughter.

MOLESWORTH.—On Dec 8th, at Folkestone, the wife of H. W. L. Molesworth, F.R.C.S. Eng., of a son.

SHACKEL.—On Dec. 13th, at Mayfield, Sussex, the wife of Edward M. Shackel, M.B. Camb., of a daughter.

MARRIAGES

FURLONG—LEFAUX.—On Dec. 14th, at St. Andrew's, Mottingham, Ronald Furlong, M.B. Lond., F.R.C.S. Eng., of Eltham, to Elva, eldest daughter of Mr. and Mrs. Ernest Lefaux, of West Park, Eltham.

HARVEY-WILLIAMS—MARSHALL.—On Dec. 6th, at St. Andrew's, Cheam, Robert Harvey-Williams, F.R.C.S. Edin., to Evelyn Margaret (née Orr-Ewing), widow of Lieutenant Herbert Marshall, R.A.F.

HIME—MOORE.—On Dec. 10th, at Cambridge, Major-General Henry C. R. Hime, C.B., D.S.O., late Royal Army Medical Corps, to Hilda Margaret, younger daughter of the late Mr. E. Moore and of Mrs. Moore, of Cambridge.

PRIDIE—EGERTON.—On Dec. 8th, at Stanton Prior, Somerset, Kenneth Hampden Pridie, M.B. Lond., F.R.C.S. Eng., of Bristol, to Joanna Mary Egerton, M.R.C.S. Eng.

DEATHS

FRANKLIN.—On Dec. 1st, at Bournemouth, Denham Francis Franklin, F.R.C.S. Edin., Lt.-Col., R.A.M.C., retd., aged 76 years.

GAIGER.—On Dec. 14th, at Birkenhead, Sydney Herbert Gaiger, F.R.C.V.S. (Professor of Veterinary Pathology, University of Liverpool).

JOHNSTON.—On Dec. 13th, in London, Stewart Russell Johnston, Surgeon Commander, R.N., M.R.C.S. Eng. Buried at Hastings.

SPURRIER.—On Saturday, Dec. 8th, at Clevelands, Benenden, Kent, Harry Spurrier, M.B. Camb.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

ADAM ROUS

SURGEON TO EDWARD THE THIRD

BY R. R. JAMES

BEYOND the short abstract of his will, proved in the Court of Husting of the City of London, little would appear to be known about Adam Rous. The Court of Husting is of Scandinavian origin; its functions as regards wills were principally concerned with those of real property. Thus the wills of citizens who owned property in the city and left children to succeed were proved in this court, but there was no reason why they should not have been proved before the ecclesiastical authorities as well and several cases occur in which both customs were followed. Rous's will was also proved in the Commissary Court of London and the record, in Latin, is preserved at the Principal Probate Registry at Somerset House. The practice of proving wills before the civil as well as before the ecclesiastical authorities was not confined to London; many Bristol wills were proved before the mayor as well as before the ecclesiastical authorities until well into the sixteenth century.

The Patent and Close Rolls of the period contain a few references to Rous and there is a good deal about him in the records of the Husting Court. In passing I may note that an Adam le Rouse, of Donestaple (Dunstable), is referred to on the rolls of the year 1314. It is tempting to think of him as an ancestor of the surgeon, but the name was fairly common at the time and usually indicated that the possessor was red-headed.

My first fact occurs on the Close Roll of 33 Edward III., 1359, March 24th. "Master Adam Rous the King's surgeon is sent to the Abbot and Convent of Croyland to receive such maintenance in that house for life as Henry atte Naysse, deceased, had therein at the King's request, by privy seal."

This is a typical example of what is known as a corrody: an allowance or money due by a monastery to the founder for the maintenance of one of his servants. As Adam did not die till 1379 it will be seen that he enjoyed his corrody for 20 years. I think it is pretty certain that he did not avail himself of the order to reside in the abbey but took the money equivalent instead. Dugdale (*Monasticon*, II., 102) says that Croyland was worth at this time to the King £85 6*s.* ½*d.*, of which the allowance to the monks amounted to £8 17*s.* ½*d.* The Patent Roll 35 Edward III., 1361, Nov. 4th, gives a grant for life to the King's surgeon Master Adam le Rous of a messuage and four shops in the parish of St. Mildred in la Poletrie, a messuage in the parish of St. Edmund the King in Lumbardstrete and three shops in Bercherin's-lane in the city of London; which are extraded at 8 marks yearly beyond reprises and charges incumbent on them, and escheated to the King because Alice, daughter of Peter le Rous of Grenestede who held them of him in chief died without heir, as has been found by inquisition taken by John Pecche mayor of the city and escheator there.

In 1372 there is a further reference to this grant, this time in fee. The Patent Roll of 48 Edward III., 1374, Feb. 26th, records a grant to Master Adam the King's surgeon in recompense of two grants of £10 yearly at the Exchequer by letters patent surrendered, dated May 16th in the 31st year and Oct. 1st in the 32nd year respectively, of the £20 yearly which the exors. and assigns of Thomas de Lodelowe deceased, one of the barons of the Exchequer, are held to pay yearly for the keeping of two parts of the manors of Westtillebury and Plombergh, co. Essex, late of Thomas Vaghan, chivalier, who held in chief during the nonage of his heir: grant also if the heir attain full age during the life-time of Adam he shall have £20 yearly at the Exchequer again, as granted in the said letters patent.

The Close Roll of 50 Edward III., 1376, June 18th, contains the following interesting record.

To the Mayor and Sheriffs of London: Order upon the petition of Thomas,† prior of St. Bartholomew Smythefeld London, if in a plea pending before them in the Husting of London, without the King's writ, between Adam Rouse, "leche," and the said prior concerning the unlawful taking and detenue of chattels of the said Adam, proceedings having been had and allegation made as hereinafter mentioned, to proceed therein with what speed they conveniently may, doing speedy justice to the parties according to the law and custom of the said city such allegation notwithstanding, provided they proceed not to rendering judgement without advising the King; as the said petition shews that the prior has avowed that the taking of the naam * (*sic*) aforesaid in certain tenements in the parish of St. Mildred in the Poultry which were of Robert Moton, by reason of a certain rent therefrom issuing which pertains to his said church and to him is in arrear, is lawful and reasonable, shewing also that the plaintiff in his pleading has alleged that lately the King by letters patent granted those tenements to him for life, and after by other letters patent confirmed his estate therein to the said Adam and his heirs for ever, and that so he ought not to proceed in that plea without advising the King, and shewing that by reason of that allegation the Mayor and Sheriffs have deferred and yet do defer to proceed therein.

Unfortunately the records of the Court of Husting tell us nothing about this distraint of the prior of St. Bartholomew's, but as the hospital benefited under Rous's will it would seem that no ill-feeling resulted. But though the Husting rolls are silent upon this point they provide us with 14 grants of property to or by Rous or his wife. I have omitted many facts of interest in the topography of old London, such as in most instances the boundaries of the estates, as well as the names of most of the witnesses.

HUSTING ROLL 91

No. 19. Grant by Thomas, son & heir of Henry Vyman, sometime citizen of London & Katherine his mother widow of the said Henry, quitclaiming to Master Adam Rous, surgeon of our Lord the King & citizen of London & his heirs all their claims in a shop with solar built over it in the parish of All Saints in the Roperie. . . Sealed before Stephen Cavendisshe, Maior, James Andren & John Albon, Sheriffs, Bartholomew Frestlyng, Alderman of the Ward. Five witnesses named, among them Wm. de Stodye. London. Monday next St. Matthew. 37. Edwd. III.

No. 25. Grant by Cristina relict of John de Harpesfeld, citizen & shoemaker of London & Thos. de Hyndene, supervisor of John's will, by virtue & authority of the said will & of a plea held in the Husting Monday before St. Margaret, 36. Edwd. III, confirming to Adam, the King's surgeon 2 shops with solars & with a water course through gutters in the parish of All Saints the Great in the Ropery lying between the shop of the said John on the west and a tenement called le Hood-on-the-Hop on the east, for 44 shilling sterling paid annually & quit rent as John in his life time received it for a certain small plot annexed to a certain shop situated in the same parish upon the corner of Dounegate (Dowgate). Signed as before the last, with 6 witnesses. London. 10, Feb. 37. Edwd. III.

No. 50. Grant by William de Stodeleye, rector of St. Benedict next Paules Wharfe confirming to Adam and Cristina de Herpesfeld and her heirs a tenement with shops, cellars, solar etc in the corner of Dowgate, in the parish of All Hallows at Hay. Sealed before the Mayor, etc as before. London. 9, March, 37. Edwd. III.

ROLL 92

No. 168. Refers to the messuage and shops in the Poultry and Lombard St. which belonged to Alice,

† Thomas de Watford, died 1381 (*Monasticon*, vol. VI.).
* From *Namare*, to distrain.

daughter of Peter le Rous (*vide supra*)," for good service." Dated 4, Nov. 35. Edwd. III.

ROLL 94

No. 76. Grant by Adam quitclaiming to Cristine (*vide supra*) all his title & claim to the tenement jointly held by demise from Wm. de Stodleye at the corner of Dowgate. Sealed before Adam de Burge, Maior, Simon de Mordone & John de Mitforde, Sheriffs, Frestlyng, Alderman, etc. London. 20, Aug. 39. Edwd. III.

ROLL 95

No. 67. A long document by Cristine reciting the above grant. (John's exors. had sold the tenements in Dowgate to Wm. de Stodeley): now Cristine confirms to Adam. Sealed before John Lovekyn, Maior, John Warde & Thos. atte Lee, Sheriffs, Frestlyng, Alderman. London. Saturday before St. John *ante portam Latinam* 41. Edwd. III.

ROLL 106

No. 74. Adam, citing letters patent of Edward III, granting him a messuage and 4 shops in St. Mildred in the Poultry, confirms to Wm. atte Vyne, John Mirfeld & Robt. Brien: viz a messuage and 3 shops & the reversion of the fourth shop which Wm. Algar, sherman, held and 2 marks of rent which reverted on the death of Algar. Witnessed by Nich. Brembre, Maior, Nich. Twyford & And. Pykeman, Sheriffs etc. London. 11, Dec. 1. Rich. II.

ROLL 107

No. 11. Deals in a similar way with the property in Lombard St. confirming to the last-named. Witnesses, as last. London. 9, July. 2. Rich. II.

No. 44. Grant by Adam & Juliana, his wife to Robt. de la Launde, goldsmith and citizen of London, John Yne and Laurence Wympole, clerk of the tenement which was Hawyse, relict of Wm. Swalbe and after of Wm. Waryn, citizen and candeler, situated in Wodestrete in St. Alphege within Crepulgate. . . And if it happen that the said brewhouse with its belongings be treated fraudulently then a certain chantry founded by the donors at the altar of St. John Baptist in the church of Lesnes may altogether cease. Witnesses. Brembre, Maior, Thos. Cornwaleys and John Boseham, Sheriffs, Robt. Warburton, Alderman, etc. London. 15, Oct. 2. Rich. II.

No. 45. Grant by Robt. Launde and the other feoffees named above to Adam and Juliana of the above said, rendering yearly a red rose at the Nativity of St. John Baptist. Witnesses, as last. Dated, 18, Oct.

No. 46. Indenture by Sir John, Abbot of Lesnes in the diocese of Rochester and the Convent there, to Adam and Juliana releasing to them iis. rent out of the tenement in which they dwell which was Roger de Mymmes and after David, surigicus, in St. Alphege within Crepulgate on condition that Adam & Juliana enfeoff Launde, Ine & Wympole in a brewhouse in St. Alphege . . . so that the feoffees may hold it by a true title and defend it as much as possible and failing, the abbot and convent may charge the rent as before.

No. 47. Grant by Abbot John and the Convent confirming to Adam & Juliana all the lands, tenements with easements and 15*s*. rent which they ought to have for a certain brewhouse which Juliane Payne sometime held, which David "leche," surgeon, late of London demised to Juliane his relict for 43 years and which Adam & Juliane surrendered to us . . . to hold the same for their lives paying 20*s*. a year. Given in the Chapter House of Lesnes, Monday in St. Luke, 1378.

ROLL 112

No. 113. Grant by Juliana, relict of Adam Rous, in pure widowhood and full power to John Ive (or Ine), Rector of St. Michael, Woodstrete, Sir Laurence Wynpole, chaplain and Thos. de Mordon, citizen and chandler, the tenement with buildings about it in which I dwell in Woodstrete which David le leche, citizen, sometime my husband had by gift and feoffment of Walter de Merstham, Rector of St. Alphege, who first had it by sale from David and me the aforesaid Juliana, sometime wife of Roger de Mynnes, citizen and chandler, whose will was enrolled in the Husting on a plea of land, Monday before St. Petronille, 24, Edwd. III, and on my death to be sold. And it is situated in width between the Dean & Chapter of St. Martin the Great on the north, and a tenement of the Abbot of Lesnes on the south and reaches from Wodstrete on the east to the tenement of Lord de Ros on the west. Warranty to feoffees. Sealed before Brembre, Maior, John More & Simon Winchecombe, Sheriffs, Ad. Bame, Alderman, etc. London. 20, April. 7. Rich. II.

No. 118. Grant by same feoffees to Juliana for life at a rose rent, she to keep it in good repair, that it may return to them in as good state as when received, except by fire, sudden ruin or injury by tempest. Witnesses as last. Dated 23, April. 7. Rich. II.

Clapham's History of Lesnes Abbey refers to a lease from Adam to Abbot John Haunsard, A.D. 1378. The original is in the Public Record Office (Ancient Deeds, Vol. V. A.7372). This deed is in a very imperfect state. It is a notification by Dom. John, Abbot of Lesnes and the Convent, that they have granted to Adam Rous, surgeon of the City of London and Juliana his wife a rent of 15*s*., which they receive out of a certain brewhouse late in the possession of David Leche surgeon, sometime citizen of London and the said Juliana, relict of the said David, to hold the same to farm for their lives rendering us . . . rent and performing the accustomed services due, with reversion to the Abbot and Convent . . . of St. Lucy, 1378.

These deeds show that Juliana was a much married woman. She certainly outlived Mynnes,‡ David, and Adam. She did well out of each husband and it will be seen that Adam and she lived in David's old home.

Adam Rous and two of his wives figure in the list of benefactors of the monastery of St. Albans (Clutterbuck's Herts., Vol. I., Appendix 6). Adam gave a noble cope with chasuble of red and white velvet (possibly velvet of Bruges) powdered with sprays and leopards set with pearls finely embroidered. Beatrix and Juliana, *quondam uxores ejus*, gave to the high altar a chalice, parcel gilt, and to the monastery, a certain tenement in the street of Dowegate in London, which was valued at 40*s*. a year. Of this value the sub-cellarer was to pay 10*s*. to the convent for a pittance on the anniversary of Adam's obit.

The abstract of Adam's will in the Court of Husting is quite a short one, though it mentions the more important details. The following is an abridged translation of the copy in the Commissary Court of London (Comm. Court of London, Courtney, 62).

THE WILL

In the name and honour of the holy and undivided Trinity, Father, Son, and Holy Spirit, Amen. On the XXVIIth day of April A.D. 1379 and in the 2nd year of King Richard II. I, Adam Rous, *Surrigicus* & Citizen of London, sound of mind and body, meditating on the ends of this order, make and constitute my testament in this manner. First I leave, give and commend my soul to God my almighty creator & to Saviour King, & to Mary the ever glorious Virgin & to all saints and my body to be buried in the monastery of St. Albans in the place there by me constituted. I leave to the new work of St. Paul's, London XXs. I leave to be distributed by my executors on the day of my sepulture between the most weak & destitute poor . . . for my soul & the souls of all the faithful departed, viz. 20*s*. in the parish of St. Alphege within Creplegate, & another 20*s*. in the church of St. Albans. I leave to the Friars Minors & Friars Preachers of London to pray for my soul, to each of them 20*s*. I leave to the orders of Carmelites & Augustinians to pray for my soul to each of them 10*s*. I leave to the abbey of St. Albans on the day of my sepulture to make a pittance for the monks of the said abbey 40*s*. To the high altar of St. Alphege within Crepulgate 13*s*. 4*d*. To William Stodley a girdle with purse and a small knife which the Duke of Lancaster [1] gave me.

To Laurence Duram my executor 20*s*. To the Rector of St. Alphege within Crepilgate, supervisor of my will 20*s*. Item they cause to be placed about me 5 round torches each to weigh 10 li. of wax to be burnt about my corpse

‡ Will, dated 14th March, 1348. Court of Husting. Roll. 79. m. 70.

the while divine office is celebrated for my soul & after my burial I leave 1 torch of the aforesaid 5 to be burnt while it lasts in the church of St. Alphege, one in the same way in the church of St. Paul, one in the church of St. Mildret in the Poultry, one in the church of the Blessed Mary of Colcherche & one in the church of St. Martin Orgar. I will and leave that my exors cause to be made 5 other round torches to burn about my corpse on the day of my burial and on the day of month's mind.[2] And after the day of my month's mind that the five torches remain to the abbey of St. Albans. And I will and ordain that those 5 torches and each of them thus made weigh 10 li. of wax. I will that my said exor cause to be made 12 torches of which each is to weigh 10 li. and I will that 6 burn about my body in London on the day of burial & at my month's mind and be given to divers churches the most indigent afterwards according to the disposition of Juliane my wife & my exors. And I will that other 6 torches burn at St. Albans & that 4 may serve the High altar in the monastery to illumine the Body of the Lord & that the other two be taken & delivered to the church of St. Peter in the town of St. Albans to illumine the Body of the Lord there.

To Juliane my wife all my tenement with two superstructures & all its belongings which I acquired of Cristine sometime wife of John Harpesfeld, citizen and shoemaker, situated in the parish of All Hallows, called le Mochale in London; namely between the street called de Douegate on the west part & a lane called Cosineslane and the tenement of Bartholomew Frestling sometime Roger de Waltham's on the east part & a tenement of the said Bartholomew de Frestling sometime Wm. de Rokele's on the south part. To have and to hold all the said tenement with houses, superstructures & all its belongings to the said Juliane for the whole of her life rendering to the capital Lords of the fee the service due & of right customary. And after the death of the said Juliane I will that all that said tenement with its appurtenances may wholly remain to the abbey & convent of St. Albans on the following condition, viz that they, the abbot & convent yearly on the day of my anniversary celebrate the divine office by name for my soul as it is accustomed to be celebrated on the anniversary of an abbot. And for the soul of my wife Juliane in the said monastery & for the souls of the faithful departed in perpetuity, and that 10*s*. from the rents of the said tenement be expended on the day of my anniversary and Juliane my wife's, between all those monks who were then there present about my said obit. To have & to hold the whole tenement etc to the abbot & convent & their successors in pure and perpetual alms, paying to the capital Lords of the fee the services due & accustomed.

I leave to Juliane my wife those two shops with belongings situated in la Roperye of London that I acquired of the said Cristine & from Thos. Hindene in the parish of All Hallows called le Mochele in London, viz between the tenement of John Amours on the north and a tenement called le hoode on the hope on the east and the King's way of La Roperie on the south and a tenement sometime Isabell de Preston on the north, to have and to hold to Juliane for the term of her life . . . and after her death in pure and perpetual alms to the abbess & convent of the abbey of St. Clare without Algate in aid for the clothing of poor nuns. . . That they may have my soul & the souls of all the faithful departed in their divine prayers, to have and to hold etc.

I leave to Juliane my wife the reversion if it chance of my tenement in Cornhulle after the death of William my brother & Johane his wife . . . and after the decease of the said Wm., Johan & Juliane I will that the whole tenement may remain to the house of the Salutation of the Mother of God, otherwise the Carthusians next London, that the religious men of the said house may have my soul and that of Juliane and those of all the faithful dead in their daily prayers. . . I leave to William Bowiere my son and Lore his wife a tenement I acquired of John Ingram in the parish of St. Andrew upon Cornhulle, and to the heirs of their bodies lawfully procreated, with remainder to the Carthusians. . .

I leave to the Prior & Convent of the church of St. Bartholomew of Westsmethfeld in the suburb of London the reversion of all those tenements with houses, shops, gates, walls and gardens with all their belongings they ought to have after the death of John Hertishulle, clerk, in the parish of St. Andrew Holborn, in perpetuity and I leave to the said prior and convent the reversion of all those tenements etc which ought to fall to me after the death of the said John Hertshull in the parish of St. Mildrede London, & St. Edmund the King in Lumbard Strete & Berchenelane . . . and 40*d*. yearly rent which I acquired of Cristine relict of John Harpesfeld & Thos. Hynden, overseer of his will, arising from a small plot annexed to a shop in the parish of All Hallows the Great in La Roperye upon the corner of the King's way of Douegate, to be expended in wine among the convent to remember each year my anniversary, to have, hold and receive the said 40*d*. yearly at the feasts of Easter and St. Michael by equal portions. . . I leave the wife of Simon my brother and their children 13*s*. To Walter my brother, 20*s*. John my cosen, 20*s*. The three sons of Wm. Bowier my son, 20*s*. Rich. Beir, 13*s*. 4*d*. To two monks, my kinsmen, 30*s*. John Blisse, my kinsman, 6*s*. 8*d*. Thos., son of Wm. Rous, my brother 13*s*. 4*d*. Cristine Harpfeld 6*s*. 8*d*. John Abbot, my house servant 26*s*. 8*d*. John Burde 6*s*. 8*d*. Residue to wife Juliana, Walter Stodeleie, Canon of St. Martin the Great & Laurence Durham, chaundelore, of London & the supervisor of my will I make the Rector of St. Alphege.

Wit. Sir John, Rector of St. Alphege, John Hare, Tho. Hereford, Wm. Tayllour, Robt. Shereman, Wm. Asheburne, clerk, citizens of London. I leave for the expenses of my sepulture £20. To John Baylond 6*s*. 8*d*. To each chaplain celebrating in St. Alphege on the day of my burial 12*d*. To the Master Clerk of the parish 12*d*. To the sub-clerk 6*d*. To the sustentation of the light of the great cross in the said church 6*s*. 8*d*. To the repair of the light of St. Katherine there, 3*s*. 4*d*. Proved 10, Kal. July.

Rous's will is one of the earliest proved in the Commissary Court and is of unusual length. It will be seen that he was taking no chances with regard to the good of his soul and it is obvious that he must have had a very good opinion of himself or he would hardly have stipulated for an anniversary service of the same quality as that for a mitred abbot. The early form of a repairing lease is of great interest.

I owe to my friend Mr. Harvey Bloom the transcripts of the will and other documents.

REFERENCES

1. Duke of Lancaster is John of Gaunt.
2. The month's mind was the memorial service one month after the funeral.

THOMAS YOUNG

Thomas Young is remembered to-day for having established the undulatory theory of light, and for his success in solving the mystery of Egyptian hieroglyphics. At the suggestion of Lord Rutherford, Mr. Frank Oldham has recalled the main facts of his life and his chief contributions to physics and literature.[1] Thomas Young was born in 1773; it is stated that he could read at the age of two. His parents were Quakers, evidently well off and much care was taken with his education. We are told that on leaving school at about 12 Young applied himself to the study of the grammar of such languages as Hebrew, Chaldean, Syriac, Samaritan, and Persian. At the age of seventeen he had mastered the Principia and Optics of Newton, Linnæus's botany, and the systems of chemistry of Lavoisier and Nicolson, and was also adept at Greek. This early training in languages, mathematics, and science was an excellent preparation for his subsequent career, but careful observation and a practical turn of mind were also responsible for his discoveries in physics. Mr. Oldham says that Young is an outstanding example of a man in whom classical training had not warped the appeal of natural phenomena and their scientific explanation. At the same time Young's education had a serious

[1] Thomas Young, F.R.S., Philosopher and Physician. By Frank Oldham, M.A., B.Sc., A.Inst.P. London: Edward Arnold. 1933. Pp. 159.

defect because he missed the moulding influence of other minds such as a less isolated training would have given him and throughout his life he failed to talk down to his audience.

In September, 1793, Young entered as a student at St. Bartholomew's Hospital and his full notes provide us with accounts of the method of teaching there employed and also of those responsible for the course. He studied anatomy, physiology, and botany and the practice of medicine and midwifery. The practical anatomy course included dissection of an eye; Young was given the eye of a recently killed ox and perceived that the ciliary muscles attached to the lens were still active and were compressing the lens. He had already studied optics, and he saw that here lay an explanation of the process of accommodation attributed by contemporary medical opinion to alteration in the length of the eyeball. The outcome was a paper by Young which was published in the Transactions of the Royal Society in 1793 and secured his election to its fellowship at the early age of 21. He continued his medical studies at Edinburgh and Göttingen and in 1797, when he was 24, he matriculated at Cambridge, where we are told that the junior undergraduates avoided him and dubbed him "Phenomenon Young." Young's studies at Cambridge were evidently profitable; he was able to complete his work on the eye as an optical instrument and to begin those researches on sound and light which subsequently placed him in the foremost rank among the scientists of his day. After leaving Cambridge in 1799 he moved to Welbeck Street, and in 1801 became Professor of Natural Philosophy at the Royal Institution. His lectures there were not appreciated by his audiences, and in 1803 he relinquished the post, his chief desire being to establish himself as a medical man. It should be noted that although the Royal Institution lectures were not successful when delivered, they were published in 1807 and have received the highest praise from informed posterity.

In 1808 Young took the Cambridge M.D. and in January, 1811, he was elected as a physician to the staff of St. George's Hospital. Here also, although he conscientiously carried out his duties Young failed to achieve success; his real talents lay elsewhere, though he was slow to recognise this and disappointed at his failure. In 1807 he wrote to Davy: "In many other departments of science I have been able to draw conclusions from a comparison of the experiments of others which I should have been much longer in discovering by investigations of my own, and why not in Physic?" The result of these labours, published in the form of a book entitled "Introduction to Medical Literature," is now forgotten. Amongst his other medical publications is a "Practical and Historical Essay on Consumptive Diseases." Eventually he seems to have found a more congenial line in life assurance statistics in which he improved the current method of computing the expectation of life. Latterly Young gave up private practice and occupied himself chiefly with scientific work. He died in 1829, aged 56, and a monument to his memory was erected in Westminster Abbey, where he is described as having "First established the undulatory theory of light and first penetrated the obscurity which had veiled for ages the hieroglyphics of Egypt."

MERRIE ENGLAND[1]

WHEN was England first known as "merrie," and for which reasons did she earn her fame? No doubt accurate answers could be forthcoming from scholars; but all can see, after reading Mr. Bryant's book, that England 270 years ago had a claim to the sobriquet. It was a land of good temper; food in plenty made hospitality a popular virtue; sporting instincts were easily satisfied; the love of music was universal, and to make music was a common achievement. Rough compared to France and unlettered compared to Italy as the manner and accomplishments of the ruling English classes might be, the general population must have been as cultivated as that of the leading nations, with a greater capacity for enjoyment.

The passages in this attractive book which call attention to medical affairs are neither many nor important. In a well-informed chapter entitled "Religio Medici" we get examples of the crudity of medical knowledge which prevailed just before the rapid arrival of scientific methods, and it is with a right sense of proportion that the author gives his few medical details. But the picturesque descriptions of manners and scenes obtrude one side of medicine insistently upon the reader's attention—the cities, and probably the Capital City to an extreme degree, must have been foul; instead of being shocked at the mortality statistics we must wonder that the toll of life was not heavier in the massed centres of infection.

[1] The England of Charles II. By Arthur Bryant. London: Longmans Green and Co., Ltd. 1934. Pp. 199. 6s.

WORLD-WIDE HYGIENIC PRECAUTION

AT the October session of the permanent committee of the Office International d'Hygiène Publique there was the usual free interchange of information relating to epidemic disease and frank discussion by national experts of all the relevant facts with a view to limiting the restrictions on shipping and other forms of traffic to the minimum that can be justified on epidemiological grounds.[1] Largely through the efforts of Sir George Buchanan this policy found expression in the International Sanitary Convention of 1926 and it is gratifying to note that the principles therein accepted have recently been extended to the sanitary control of aerial traffic. Proposals were made at this session for the abolition of bills of health and consular visas, for attention to rat-proofing of ships as a means of avoiding the necessity for periodical deratisation, for further efforts to discover the significance of vibrio carriers and to devise an appropriate treatment, and for the treatment of merchant seamen suffering from venereal disease.

The convention for *aerial navigation* (1933) awaits ratification by six more countries before coming into force, but the required number is likely soon to be obtained. In the meantime the committee is endeavouring to arrange uniform regulations in the countries over which air traffic passes. In applying measures against yellow fever, difficulty arises from the discovery that in the interior of Africa and South America there are vast areas in which, taking the "mouse-protection test" as a criterion, yellow fever is endemic, but in which no case of yellow fever has ever been reported. One of these "silent areas" lies in the southern part of the Anglo-Egyptian Soudan and this year occurred a fatal case diagnosed as yellow fever. Intensive search for clinical cases is now being made in other silent areas; in this task the histological examination of specimens of liver tissue obtained by "viscerotomy" or by the autopsy of persons dying from fevers of less than ten days' duration is regarded as a useful aid in diagnosis. In precautions against plague it is impossible to rely on vaccination for the protection of individuals.

Two different methods of protective vaccination against *yellow fever* are being tried in the field. In one of these living neurotropic virus fixed for mice is used in combination with immune serum; in the other the same living virus is used alone in different stages of attenuation. In the present state of knowledge the use of living virus without the addition of immune serum seems to involve risk.

Search continues for a bacteriological method of identifying the *cholera* vibrio which will give the same results when employed by workers in any part of the world. Concerted work in England and India suggests that "O" agglutination is the method of identification upon which most reliance can be placed and attempts are being made to prepare an "O" antigen in a dried form in which the "H" fraction has been destroyed by heat. Such an antigen should make it

[1] The report can be had on application to the Office International at 195, Boulevard St. Germain, Paris.

possible for workers in any part of the world to obtain precisely comparable results. The matter is of practical importance since, even in the absence of clinical cases of cholera, agglutinable and non-agglutinable vibrios are sometimes found at El Tor in pilgrims returning from Mecca and doubt arises whether these vibrios are to be regarded as the true cholera vibrio or not.

The new procedure for preparing *small-pox* vaccine by cultivation was discussed; the culture medium is the allantoic membrane of the incubated hen's egg. The lymph obtained by this procedure seems to be identical in its effects with ordinary calf-lymph, but trials on a large scale will be necessary before a considered opinion can be given.

WHITAKER'S ALMANACK

THE Almanack for 1935 contains, as the title-page indicates, a vast Amount of Information, and medicine probably receives its fair share of attention. There are 26 entries under the caption Medical and 44 under Hospitals in the index; the medical section on professional education is brief but sufficient; the names may be found of medical staffs of Government departments, and of medical officers of health. These are for the public. The value of the Almanack to the medical profession arises from the rest of the 26,000 references in the index. Whitaker is one of the few works of reference which keeps strictly up to date, and the reader will not seek in vain for the personnel of such new statutory bodies as the Unemployment Assistance Board. We are not surprised to learn that the Almanack is increasing the number of its readers, especially among adolescents. The price of the full edition (1000 pages), in the familiar red and green cloth cover, is 6s.

NEW PREPARATIONS

"SEPTER" OUTFIT.—We have received from National Drug Industries Ltd., Emmott-street, London, E.1, a little outfit devised for the alleviation and cure of nasal catarrh. The treatment is novel, consisting of the introduction into the nostrils of small containers holding an antiseptic cream, when the temperature of the nostrils and the act of breathing leads the vaporised medicament into the nasal passages.

ANAQUINTINE.—This preparation is put on the market by the Anglo-French Drug Co., Ltd., 11-12, Guilford-street, W.C.1. It contains thymoform, eucalyptol, ephedrine, and certain aldehydes, and has been found of value when instilled into the nostrils in colds, catarrh, and coryza. It has been used also as an accessory in the treatment of influenza and whooping-cough where disinfection in the nasal passages is particularly called for. The active principals are made up in a bland vegetable oil and the preparation is supplied in a conveniently shaped bottle fitted with a drop-counting instillator. The evidence supplied warrants trial for the preparation, having regard to the obstinacy of the conditions it has been devised to remedy.

KEY BRAND GRAPE JUICE.—We have received a specimen bottle of this preparation which is the unadulterated juice of South African grapes, produced at the instance of the Coöperative Wine Growers Association of South Africa. Viticulture is now an important industry in the Cape Province of South Africa, and the placing of this preparation on the market is an attempt to make the properties of the grape available in other forms than wine and spirit. A certified analysis is supplied by the Association, and attention is called, by many quotations from books and journals, to the therapeutic value of unadulterated grape juice. Further, a very pleasant beverage can be obtained by admixture with water. The agents for the sale of K.W.V. Grape Juice are Dominions Producers Sales, Ltd., Sentinel House, Southampton-row, London, W.C.1.

Vacancies

For further information refer to the advertisement columns

Bath, Royal United Hospital.—Hon. Physician.
Belfast, Queen's University.—Dunville Chair of Physiology. £900. Also J. C. White Chair of Biochemistry. £800.
Birmingham, Cannell Hall Babies' Hospital.—Res. M.O. At rate of £250.
Birmingham Children's Hospital.—Res. M.O. £175.
Birmingham, Selly Oak Hospital.—Jun. M.O. £200.
Bolton Royal Infirmary.—H.S. £125.
Bristol Eye Hospital.—Asst. Res. H.S. £100.
Burton-on-Trent General Infirmary.—Cas. O. and H.P. £150.
Bury County Borough.—Asst. M.O.H. £500.
Cardiff, Welsh National School of Medicine.—Jun. Asst. for the Med. Unit. At rate of £250.
Chelmsford and Essex Hospital.—Hon. Anæsthetists.
Dover Borough.—Asst. M.O.H. £750.
Exeter, Devon Mental Hosp., Exminster.—Jun. Asst. M.O. £350.
Finsbury Metropolitan Borough.—Asst. M.O.H. and Tuber. O. £750.
Gloucestershire Royal Infirmary and Eye Institution.—Res. Surg. O. At rate of £200.
Guy's Hospital, S.E.—Two Hon. Anæsthetists.
Harrow Urban District Council.—Asst. M.O.H. £600.
Hospital for Sick Children, Great Ormond-street, W.C.—Out-Patient Med. Reg. £250. Also Surg. Reg. £200.
Leicester City General Hospital.—Res. M.O. At rate of £300.
L.C.C. Hospital, Ducane-road, Hammersmith.—Three H.P.'s. Also Two H.S.'s.
London Hospital, E.—First Asst. in Dept. of Physical Medicine. £150.
Manchester, Ancoats Hospital.—Res. Surg. O. £200.
Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Res. M.O. for Throat Dept. £200.
Manchester, Northern Hospital for Women and Children.—Sen. and Jun. H.S. £130 and £80 respectively.
Maudsley Hospital, Denmark Hill, S.E.—Asst. M.O. £470.
Newcastle-upon-Tyne Eye Hospital.—Jun. Res. H.S. £100.
Radium Beam Therapy Research, Radium Institute, Riding House-street, W.—Asst. M.O. At rate of £250.
St. George's Hospital, S.W.—Res. Anæsthetist. £100.
St. Mary's Hospital, W.—Third Asst. Pathologist. £250. Physician for Nervous Diseases. Also Clin. Asst. in Dept. for Dis. of Skin.
Staffordshire General Infirmary.—H.S. At rate of £200.
Surrey County Council.—Asst. M.O. £600.
Walthamstow, Borough of.—Temp. Dist. M.O. 11 guineas per week.
West London Hospital, Hammersmith-road, W.—Hon. Asst. Radiol.
Worcester County and City Mental Hospital, Powick.—Asst. M.O. £350.
York, Friends' Retreat.—Jun. M.O. £300.

Medical Referee under the Workmen's Compensation Act, 1925, for the Hanley and Stoke-upon-Trent, Leek, Newcastle-under-Lyme, Stone, Lichfield, Stafford, Tamworth and Uttoxeter County Court Districts (Circuit No. 26) with a view to his employment in ophthalmic cases. Applications should be addressed to the Private Secretary, Home Office, Whitehall, London, S.W.1, before Jan. 5th, 1935.

CANADIAN MEDICAL DIRECTORY.—We have received from the Canadian Medical Publishing Co. of Montreal the sixteenth edition of the Canadian Medical Directory for 1934–35. This issue has been agreeably improved by the addition of a table of contents with page references. The price remains the same at 7 dollars in paper cover and 10 dollars in cloth.

BURBERRY SALE started this year on Dec. 10th with a wide choice in weatherproofs, overcoats, and sports wear. A copy of the sale catalogue will be sent to any medical man or woman on application to Burberrys Ltd., Haymarket, London, S.W.1.

A ONE-HANDED KNIFE.—We have received from Messrs. Reilly and Marris Ltd. (Shell-Mex House, London, W.C.2) a knife which can readily be used with one hand. The blade concealed in the handle can be slid forward into one of four positions and locked there by simply pressing or releasing the button. Emphasis is laid on the absence of any danger of trapping the fingers or breaking the nails, but its outstanding value would be for those who require to use a cutting instrument and have only one hand to use it. The price of the Marris Slide Blade Knife with steel blade is 2*s.* 6*d.*; with stainless steel blade, 2*s.* 9*d.*, from any dealer.